

A HUMAN SETTLEMENTS DEVELOPMENT POLICY
FOR THE PUNJAB, PAKISTAN

by

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A MASTER'S THESIS

submitted in partial fulfillment of the
requirements for the degree

MASTER OF REGIONAL AND COMMUNITY PLANNING

Department of Regional and Community Planning

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1988

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ACKNOWLEDGEMENTS

I would like to express my gratitude to Dr. Thomas L. Daniels, Dr. Mark B. Lapping, and Dr. E. Wayne Nafziger.

Each of them has played a vital role in the formation of my ideas and ideals as they relate to Regional and Community Planning.

I especially want to thank my major Professor, Dr. Thomas L. Daniels, for his help, support, and guidance throughout the past fourteen months.

In the end, I wish to thank my late aunt "Sheedi" who gave me love, encouragement, and her blessings to achieve my academic goals. She was waiting for me on July 5, 1987.

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CHAPTER-I

INTRODUCTION

1.1. Introduction

This study deals with a Human Settlements Development Policy (HSDP) for the Punjab, one of the four provinces of Pakistan. It concerns both urban and rural aspects of settlements planning in the province. Although the scope of the study is strictly limited to the Punjab Province, the methodology can be extended to other provinces with some modifications.

The task of devising an HSDP for any particular region is not a simple one. This is perhaps one of the areas of regional planning where one can find the most disagreement among planners and policy makers. The recommendations given in this study should not be considered as the final and only guidelines to solve the complex and interdependent problems faced by the settlements in the Punjab Province. I have tried to be as comprehensive in my approach as possible within the limited data sources available to me. In today's developing countries, the poor quality and quantity of data are often considered to be major factors in limiting problem analysis. But this does not mean that planners should turn away from these problems. Data problems are always going to be present, at least in the near future. There will always be complaints about inadequate data availability. But the planning process should not be handicapped by such

constraints. The process must continue no matter what the constraints. This was the basic understanding with which I undertook this task.

1.2. Problem Identification, Need, and the Hypothesis

1. Present policies have a strong urban bias with little or no attention being paid to other areas. For example, the major urban centers -- Lahore, Rawalpindi, Faisalabad -- are given the highest priority in the allocation of development budget. The development of secondary cities (e.g., Sahiwal, Sargodha, Sialkot, Bahawalpur, Jhang, etc.) is given less importance. Such policies have resulted in further concentration of population in a few urban centers and this has exacerbated the already existing problems of slums, squatter settlements, urban sprawl, urban decay, traffic congestion, unemployment, poverty, pollution, and inadequate infrastructure.

2. There is a need to identify the secondary cities in the Punjab Province for a number of reasons. First, such settlements offer a buffer zone between the large metropolitan areas and the rural habitat. If intelligent investment is encouraged in such cities, the high rate of rural to metropolitan migration will tend to decrease. As literature review will show, some of the third world countries have been successful by implementing this policy. Second, some of the basic problems faced by major urban

centers also exist in these secondary cities. For example, the problems of obtaining clean drinking water, inadequate health facilities, and energy shortages are common to both such categories of settlements. An HSDP is thus needed to identify secondary cities, recognize their problems, and suggest measures for their improvement.

3. No HSDP exists for Pakistan in general and for the Punjab Province in particular, although PEPAC (Pakistan Environmental Planning and Architectural Consultants Limited), a semi-government organization, has taken up the task of devising such a policy.

It is hypothesized that in the absence of an HSDP, the current national and local financial, physical, and human resources are not utilized in an effective manner. It is also hypothesized that some of the intermediate level (secondary) cities in the province are growing more than expected when compared to the five large primate cities, i.e., Lahore, Rawalpindi, Multan, Faisalabad, and Gujranwala. To test the hypothesis, a population settlement model will be developed to identify underachieving and overachieving communities. Overachieving settlements will get more share of the national budget and productive services. This will serve as the basis for devising an HSDP which will emphasize strategic investment in secondary cities.

1.3. An Introduction to the Punjab Province

The word "Punjab" means "five rivers", which signifies the rivers that flow through the area: the Indus, Jehlum, Chenab, Ravi, and Sutluj. Before the construction of the present canal irrigation system, much of the Punjab was no better than a desert or a semi-desert. The river waters were then used to convert the barren desert to agricultural lands.

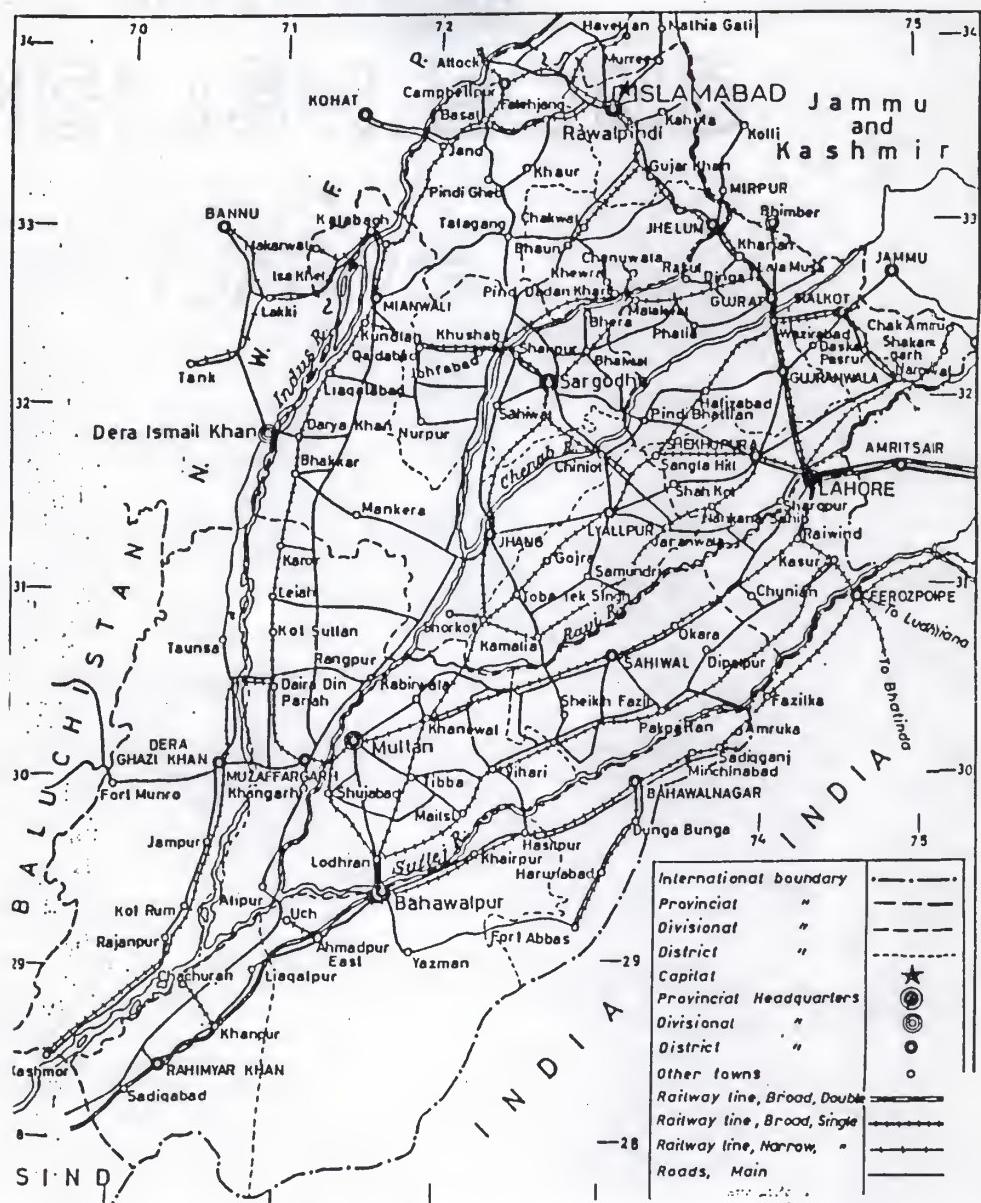
1.3.1. History

The history of the Punjab goes back to antiquity. The Potwar Plateau and the Soan Valley in the northern Punjab are the sites of the earliest relics of stone-age man in the subcontinent. The form and extent of this culture, which is probably 300,000 years old, is as yet only vaguely defined (Mumtaz 1985: 4).

Punjab formed a part of the Indus Civilization which lasted from about 2500 B.C. to 1500 B.C. It remained under the Persian occupation from 518 B.C. to 359 B.C. Alexander the Macedonian established Greek rule over the area in 326 B.C., which lasted for about nine years. The Punjab formed a part of the Mauryan empire from 317 B.C. up to the last decade of second century B.C. The first century B.C. and the earliest centuries of the Christian era witnessed a number of invasions of the Punjab by Sakas, Parthians, Kushans, Sassanians, till the Gupta dynasty was established by the middle of the fourth century A.D. In the third

quarter of the fifth century A.D., came the invasions of the white Huns followed by a long period of political instability. The Muslim influence came to the Punjab in 712 A.D. when Sind and the adjacent parts of the southern punjab, up to Multan, came under Arab rule. Then came the invasions of Mahmood of Ghazni from 1001 to 1027. Afterwards, for a period of about five hundred years, Punjab changed hands between the rulers of Ghazni, Kabul, and Delhi.. The rulers of Delhi included the Khiljis (1296-1321), the Tughluks (1321-1398), and the Lodhis (1450-1526). The Mughal rule was established in 1526 by Babur. The Mughal rule was weakened by the invasions of Nadir Shah and Ahmad Shah Abdali. The Sikhs, taking advantage of the situation, established their confederacies. Ranjit Singh, the chief of one of these confederacies, rose to power in 1792. The British forces defeated the Sikh forces in 1849 to end Sikh rule. The Mughal rule also came to an end in 1857 when the British defeated the Mughals and established the British Empire. The British rule ended in August 1947 when the two sovereign states of India and Pakistan were created. The British Indian province of the Punjab was divided into West Punjab and East Punjab. West Punjab formed a part of Pakistan, and later became known as the Punjab (Pakistan), and the East Punjab became a part of India (now the center of the Sikh movement for the creation of their homeland known as "Khalistan"). At that time, this

FIGURE 1.1: The Punjab, Pakistan



SOURCE: Kureshy, K. U.: A Geography of Pakistan (Karachi: Oxford University Press, 1977).

province consisted of administrative districts, and the princely state of Bahawalpur. In 1955, Bahawalpur lost its princely status and was divided into the three administrative districts of Bahawalpur, Bahawalnagar, and Rahim Yar Khan (Kureshy 1977: 155-56). In 1981, the Punjab had a total population of 47.2 million with 21 administrative districts. There are five major urban centers (referred as primate cities in this study) in the Punjab. Lahore is the provincial capital of the province and a major administrative, political, educational, commercial, and trade center. Other four major urban centers in the Punjab are Rawalpindi, Multan, Faisalabad, and Gujranwala.

1.3.2. Physical Geography

The Punjab province lies between latitudes $27^{\circ} 42'$ and $34^{\circ} 2'$ North and longitudes $69^{\circ} 18'$ and $75^{\circ} 23'$ East, and covers an area of 78,030 square miles (Figure 1.1). Most of this area comprises a level plain formed by the Indus system of rivers and is divided by these rivers into several "doabs" (or interfluves). The general slope of the land is from north-east to south-west, the direction of the axes of the doabs, with an average gradient of one foot per mile. However, within each doab, the land slopes downward from the axis to the bounding rivers. The north-west part of the Punjab is hilly, rising to five thousand feet and higher. The Potwar Plateau lies between these foothills and the Salt

Range. Its average elevation is only 1000-2000 feet but it is highly dissected. To the south and west, bordering the province of Baluchistan, lies the Sulaiman (or Solomon) Range, with a maximum height of 11,000 feet. The agricultural heart of the province lies in the doabs and, to a lesser extent, the Potwar Plateau. The climate is continental, signifying aridity and marked ranges of temperature, both seasonal and daily. Summers are very hot and winters cold; the mean annual range of temperature at Lahore is 28.2° F. In the northern sub-mountain strip, annual rainfall is over twenty inches which decreases southward to about five inches (*Ibid.*: 154). Old alluvial soils cover most of the area in the Punjab. These soils are deep, calcareous, of medium to fine texture, low in organic matter, but very productive when irrigated and fertilized.

Summary

This study deals with a Human Settlements Development Policy for the Punjab. The present policies of settlements development have a strong urban bias with little no attention being paid to other areas. Therefore, there is a need to identify the secondary or intermediate level cities in the Punjab. Also, no Settlements development policy exists for the Province. It is hypothesized that in the absence of a settlement policy, the current resources are not utilized in an effective manner and it is also hypothesized that some of the intermediate level cities in

the Punjab are growing more than expected when compared to the five large primate cities in the Province. The Punjab Province has a rich and varied cultural and historical heritage. Its history goes back to the stone-age period. This area has seen many invasions from the north. In 1981, it had a total population of 47.2 million with 21 administrative districts. The area has a continental climate with long hot summers and cold winters. It snows in the northern Punjab during winter.

CHAPTER-II

A REVIEW OF REGIONAL DEVELOPMENT THEORIES AND APPROACHES

Scope of the Chapter

This chapter provides a review of alternative regional development approaches and a possible application of such approaches in the Punjab, Pakistan. An extensive literature review of different theories is done as they apply to today's developing countries. Theories presented by Friedmann and Weaver (1979), and Rondinelli (1981) are examined in greater detail.

Almost all of the models are taken from developing countries. Although it was not possible to cover each and every piece of work published on this vast subject, an attempt is made to include the major publications and journal/magazine articles.

The following theories are discussed here as presented by different regional planners:-

- Central Place theory (by Walter Christaller);
- Growth Pole theory (by Francois Perroux);
- Urban Functions in Rural Development (UFRD) and Secondary Cities Development approach (by Dennis A. Rondinelli); and
- Agropolitan Development Approach (by John Friedmann and Clyde Weaver).

The last two approaches are discussed in greater detail because they are of more recent origin and appear based on

certain realities which seem more applicable to the Punjab. In the end, a detailed review of Aga Khan Rural Support Program in Pakistan is also provided.

2.1. Central Place Theory

While describing the central places in southern Germany, Walter Christaller (1933) stated that "[t]he chief profession of a town is to be the center of a region". He identified the two important concepts of "threshold demand" and "range of a good" respectively. According to Weaver (1974), "[o]ne of Christaller's fundamental assumptions was that some power limit of numbers of consumers was required before a given type of function could come into existence." This simply means that a minimum number of demands (i.e., human population) is needed before a particular use will be located in a particular town and also that there will be a range of trade areas associated with this particular use: this is the range that customers would be willing to travel to satisfy their demand for a particular good or service. An efficient settlement system is one which is constructed on these principles of threshold demand and range. This was the main idea behind Christaller's theory.

Christaller believed that some ordering principle governed the distribution of central places. The region served by a central place was termed its complementary region. Central places whose central activities extended their influence over a large area were termed central places

of higher order, whereas central places whose activities were less extensive in influence were described as central places of lower order. The service limit of each central activity was described by the outer limit of the range of the commodity in which it dealt.

Ul-Karim (1985) describes the application of central place theory in the Punjab during the Mughal and the British periods. He states that the settlement pattern during the Mughal Empire was influenced by the creation of the Inn Towns (known as "Saraey" in the local language) which were the headquarters of area chiefs. They were established to maintain law and order, insure uninterrupted movement of mail, and the exchange of goods and services. A saraey existed every twenty to thirty miles (lower level central places). The condition of perfect competition was satisfied by the flat land and the agrarian economy. There were only a few large cities, quite widely separated, offering high order goods and services (higher level central places)(ibid.:37). Ul-Karim further states that the introduction of civil and military bureaucracy by the British and the division of the Punjab into administrative units: Division, District, and Sub-district (or Tehsil) changed the previous pattern. The towns which were administrative seats started providing opportunities for economic specialization. Introduction of the railroad also disturbed this pattern. In order to facilitate the

collection and transportation of raw materials, the British established many market towns at the railroad terminals. This condition formed a pattern of solar central places. That is, the lower-level centers are not interstitially placed as they are in competitive central place hierarchies, so the market areas tend to be elliptic. Due to political and economic control the trade flows to one large market (*ibid.*:38). This clearly implies that political and economic factors are equally as important as physical factors. Ul-Karim further states that "[t]he central place advocates the thought that pinpointing the crucial market town and investing in it would bring development to the whole region. Theoretically it might be correct, buy it has not proved to be correct in the Punjab. Dual economy and the elites were dominant to subvert reforms for the development of rural areas." (*ibid.*:38).

This conclusion is further justified when a careful study of the rural development programs in the Punjab is done (see chapter 3 on rural development programs). This study demonstrates that all such projects met with a low degree of success.

2.2. Growth Pole Theory

The idea of "growth poles" (or centers) originated with Francois Perroux (1964) whose original notion of growth was intended to convey a non-spatial polarization of the economy which had a great deal in common with the problems of inter-

industry linkage and multiplier effects. In simple terms it means that declaring a certain city (or cities) as a growth center and injecting investment in the form of infrastructure and industries would help enhance development in the less developed (hinterland) regions. The process of development will have "trickling down" or spread effects to the less developed regions. This will help in reducing regional disparities among developed and less-developed regions. The application of this theory in the Punjab met with limited success. The government of the Punjab built four new cities in the less developed regions and industries like cement manufacturing, sugar, fertilizers, pesticides, and textiles were established to make use of the raw materials and the produce of these regions. But this did not alter the growth pattern as large metropolitan areas like, Lahore, Rawalpindi, Multan and Faisalabad, continued to attract capital and human resources while the new towns (growth centers) were stagnant and were surviving largely on governmental grants and assistance (Ul Karim, 1985:43). The government could avoid this failure by investing in the existing secondary cities and by not creating new towns.

This clearly suggests that a planner in a developing country must proceed with care while applying the approaches borrowed from the developed countries. An approach which is successful in a developed nation may not necessarily be successful in a country like Pakistan. This is largely due

to the physical, social, economic, technological, and political factors which vary from one particular country to another. Especially, the political and social factors inherited in the rural areas are of great importance and should be considered in any development policy if it is to be made effective and more adaptable and realistic. Otherwise it will be ineffective like other policies in the past and just an exercise in futility.

The failure of growth pole applications in developing countries is well summarized by Rondinelli (1983). He states that "[s]ome governments have promoted new towns and urban growth poles by concentrating industrial investment in regional and provincial capitals and by offering financial incentives to firms locating in industrial estates far from the largest city. But few of these policies have been successful in countries lacking systems of secondary cities that could support economic activities requiring high population thresholds and extensive services and facilities. Thus in most countries growth-pole policies have done little to develop rural hinterlands, and in some they have exacerbated regional economic dualism" (*ibid.*:10). Hence, it may be concluded that investments in a large urban center will not necessarily bring prosperity to the surrounding poor regions as assumed in the growth pole model. As shown in the later discussion on secondary cities development, the economic growth and prosperity of a large city (i.e., a

growth-pole) is not always capable of developing backward and poor regions. The spread effects of such growth pole become weaker and weaker with the increase in the physical distance from the center. Only the area within the immediate vicinity of a growth pole benefits to a certain extent.

2.3. Urban Functions in Rural Development (UFRD) and Secondary Cities Development Approaches (Dennis A. Rondinelli)

2.3.1. The Urban Functions in Rural Development Approach (UFRD)

This section reports on the work done by Dennis A. Rondinelli (1983 and 1985). He advocates the idea of locating "Urban Functions in Rural Development" (UFRD) and states that UFRD provides a way of identifying the settlements where investments in social services, infrastructure, and other productive activities can be situated more effectively and efficiently and thus integrate the rural and urban sectors of regional economies. This approach assumes that achieving economic growth with social equity involves spatial dimensions that are often ignored or overlooked in national, regional, and local planning in developing countries (*ibid.* 1983:434). He argues that "[a]lthough place oriented development policies are usually not sufficient to achieve social equity, yet greater physical access for the rural poor to services, facilities,

and productive activities that must be sited in towns and cities can be an important factor in increasing the incomes and raising the living standards of the rural population. But while place oriented development is not sufficient to achieve social equity, neither do social welfare and income redistribution programs, in the absence of development policies aimed at increasing the productive capacity of poor regions, usually alleviate poverty. Place oriented and people oriented development programs can supplement each other in the effort to stimulate socially equitable economic growth." (ibid., 1983:446-447). The distinction between "place oriented" and "people oriented" is an important consideration when proposing a settlement policy for any region. The present study is an example of a "place oriented policy" with less emphasis on "people oriented development" (although some important people oriented policies are also discussed in the proposed policy).

The importance of having a spatial or place oriented policy in the developing countries was also realized by Schumacher (1973) fifteen years ago. He writes:

"[I]n the poor countries in particular there is no hope for the poor unless there is successful regional development, a development effort outside the capital city covering all the rural areas wherever people happen to be. If this effort is not brought forth, their only choice is either to remain in their miserable condition where they

are, or to migrate into the big city where their condition will be even more miserable. It is a strange phenomenon indeed that the conventional wisdom of present-day economics can do nothing to help the poor" (Schumacher, 1973:73-74).

This further supports Rondinelli's idea of implementing the UFRD approach in less developed regions. Let us discuss his ideas in more detail as given in the Autumn, 1985 issue of the APA Journal.

a. History of UFRD

This approach was developed for United States Agency for International Development (AID) by Filipino planners in the economically backward region of Bicol River Basin, Philippines. Some aspects of this approach have already been tried in Upper Volta, the Cameroons, Malawi, and Ecuador, as well. The UFRD method was derived from analysis of settlement systems in India, Indonesia, and Ghana and other pilot projects. "[O]ne critical concern in designing the UFRD approach, however, was less with discovering new methods of analysis than with identifying techniques that already had been tested or that were thought to be applicable in developing countries. The primary object of the project was to develop a process of spatial analysis that could be applied easily under the conditions prevailing in poor rural regions" (Rondinelli, 1985: 435). UFRD may be called a "package" strategy rather than a "one shot" approach of solving spatial problems in developing

countries. Generally, the following four types of questions are asked in this approach:

1. What type of town-based services, facilities, infrastructure, and productive activities (i.e., "urban functions") do settlements within a region now have?
2. How well do functions in existing settlements within the region serve their residents and those of surrounding areas (i.e., how accessible are those settlements and their functions to people living in the periphery)?
3. Which areas in a region lack services, facilities, and infrastructure that are important for agricultural development and employment generation, either because those areas lack settlements of sufficient size and diversity to support such functions, or because the settlements where functions are located are physically inaccessible to people who live outside their boundaries?
4. How can new needed investments for rural development be distributed so that they reduce geographical disparities by serving better the areas and groups that do not have access to basic social and economic functions? (*ibid.*)

Why the above questions should be asked? Why not follow the traditional approach of physical planning which pays less attention to such questions? It depends how much

degree of equity we want to achieve. If we want development to benefit the landowning elites, then traditional approach may be followed. But if it is meant for the all who are involved in the process, then the above questions are important to ask.

But in a region like the Punjab, it is not easy to derive quick answers to the above questions. This is due to the lack of related data at Municipal Committee and Town Committee levels. In order to identify urban functions of settlements in the Punjab and answer the above questions, every single settlement must be surveyed and analyzed in all of the 21 administrative districts (as shown in 1981 Census of population) of the province. This task will include the collection of data about every Municipal Corporation (including cantonment board), Municipal Committee and Town Committee in all of these 21 districts. At least one town planner can be appointed in each Municipal Corporation, Municipal Committee, and Town Committee to furnish this goal. The detailed policies in this regard will be discussed in a later section.

b. Basic principles of UFRD

Rondinelli (1985) describes the following five principles on which the UFRD approach is based:

- i) The analysis focuses on the spatial characteristics of a region and is primarily a "place oriented" form of planning that supplements other forms of economic,

- social, and physical planning;
- ii) the UFRD approach seeks to create an ongoing planning process rather than merely to produce a spatial development plan;
 - iii) UFRD uses research methods and techniques that can be applied easily by planners who do not have extensive technical training in regional science and that can be understood easily by policy makers who may not be specialists in regional development;
 - iv) UFRD approach attempts to use as much existing data as possible and limit new data collection to areas where significant information gaps appear; and
 - v) UFRD uses a combination of analytical methods that are suitable to the area under study, make extensive use of local planners' knowledge of the region, and draws heavily on the knowledge of various groups of people--inside and outside of government ---- who live in the region (ibid.:436).

These principles are based on more realistic assumptions when compared with other regional development approaches. They advocate a gradual change in the existing settlement system; a major change in the existing system is discouraged.

c. The process of regional analysis in UFRD

The process of regional analysis in UFRD includes ten different types of methods as suggested by the author. They

include the spatial linkage analysis, analytical mapping, accessibility analysis, functional gap analysis, identification of development projects and programs, monitoring and evaluation, and institutionalizing spatial analysis in regional development planning. Some of these methods are also included in the regional analysis of the Punjab in this study and are discussed in a later section.

2.3.2. Secondary Cities Development Approach

Rondinelli (1983) advocates the idea of developing secondary cities in less developed countries and justifies the need for developing secondary cities. He introduces this concept in a well written book, Secondary Cities in Developing Countries. The following section is based on a review of this book.

a. Definition of secondary cities

The author defines secondary cities in developing countries as "[u]rban places other than the largest city (or cities) with a population of 100,000 or more" (ibid.:48). This definition may exclude, in some developing countries, smaller towns which governments may consider to be secondary urban centers and that indeed have urban characteristics. He also proves that in most developing countries, towns of less than 100,000 population are predominantly agricultural and rural service centers. This justifies fixing a minimum limit of 100,000 inhabitants. In the Punjab Province, cities other than Lahore, Rawalpindi, Faisalabad, Multan,

and Gujranwala and having population 100,000 and above, may be termed secondary cities (using the 1981 census of population). These includes: Sialkot (pop. 258,147), Sargodha (pop. 231,895), Jhang (pop. 195,558), Kasur (pop. 155,523), Gujrat (pop. 155,058), Bahawalpur (pop. 152,009), Sahiwal (pop. 150,954), Sheikhupura (pop. 141,168), Okara (pop. 127,455), Rahim Yar Khan (pop. 119,036), Chiniot (pop. 105,559), and Dera Ghazi Khan (pop. 102,007).

b. Need and importance of a secondary cities development policy

Rondinelli gives eight basic reasons why secondary cities should be developed and encouraged:

(1) Deconcentrating urbanization: Many developing countries have a primate city system. Almost all the urbanization takes place in one large urban center. In Pakistan, Karachi and Lahore are the examples of primate cities in the provinces of Sind and the Punjab respectively. Rondinelli points out that the value of one pattern of settlement over another can only be assessed in relation to national policy objectives and development goals. He fully supports Richardson's idea that if interregional (within region) equity is an important objective, a dispersed urban system with large regional metropolis in each region might be regarded as highly efficient. But if rapid industrialization is the goal, the size and spatial dispersion of cities may not be important; the objective is

to achieve "industrial targets in urban areas with locational advantages, regardless of their size and location." He concludes that "[f]or those countries pursuing a policy of economic growth in which both urban and rural populations can benefit from development, concentration of investment in the largest metropolitan areas is likely to be undesirable and widespread distribution in rural areas is likely to be ineffective." Hence a concept of more balanced development--deconcentrated urbanization--has emerged. Deconcentrated urbanization underlines the importance of moving away from the highly skewed distribution of urban population and resources found in primate city systems and towards a more diffused pattern of urbanization (*ibid.*, 1983:21). This diffused pattern of urbanization cannot be achieved effectively without developing the secondary cities. For Pakistan, such a system may be useful in many ways. A diffused pattern of urbanization may encourage more political and economic freedom, more independence, and more barriers to uncontrolled rural-urban migration.

(2) Rapid growth of the largest cities: Rondinelli argues that one of the strongest rationale for an increased interest in secondary city development lies in the unrelenting growth of the largest metropolitan centers (*ibid.*, 1983:24). For example, Mexico City is expected to become the world's largest metropolitan agglomeration in

1990 with 31 million people, followed by Sao Paulo, Brazil, with 26 million. Shanghai and Peking are expected to reach 20 million people each, Rio de Janeiro to surpass 19 million, and Bombay, Calcutta, and Jakarta to grow to more than 16 million. Seoul, Cairo, Madras, Manila, and Buenos Aires, along with Bangkok, Karachi, Delhi, and Bogota, will exceed 12 million, and Teheran, Baghdad, and Dacca are expected to reach or surpass 10 million in population. If present demographic trends hold, there will be about 284 metropolitan centers of a million or more people in developing nations by the end of the 1990's, with a combined population of 1 billion (ibid.:25).

(3) High levels of population and resource concentration in primate cities: Rondinelli argues that it is not merely the pace of urbanization that presents growing problems, but also the pattern of urban population concentration and the social and economic inequalities usually associated with spatial polarization with which developing countries have to cope in the future. He further states that "[I]n many developing countries, the middle levels of the urban hierarchy -- including secondary cities -- that could absorb more migrants and create a more balanced distribution of urban population are extremely weak. In those (countries) with primate city spatial structures the largest metropolis has grown to such size and level of wealth that it dominates the nation's settlement system and economy" (ibid.:28). An

important aspect of this phenomenon is explained by the fact that primate cities and large metropolitan centers also have concentrations of national resources and social overhead capital vastly greater than their share of national population, and from which only a small percentage of the nation's people obtain direct benefits.

(4) Alleviating problems in largest cities: The author points out that the creation of massive urban centers and primate cities in the developing countries have created serious problems of health, sanitation, food, education, housing, pollution, and employment such cities. Problems of squatter settlements and uncontrolled urban sprawl are common characteristics of such cities. By building up the capacity and increasing the number of secondary cities, many governments in developing countries hope to relieve population pressures on the largest metropolises and thus contain the growth of secondary cities to sizes that are more manageable (*ibid.*:32).

(5) Reducing regional inequities: Rondinelli agrees with the approach that developing secondary cities is one means of spreading the benefits of urbanization to a larger number of people and of reducing interregional disparities. This is true in most of the metropolitan areas where, on average, the residents are far better off than people living in the rest of the country (*ibid.*, 1983: 33).

(6) Stimulating rural economies: Rondinelli describes the important role that secondary cities play in rural development in the following way:

"[I]f serious problems of large-scale urban concentration have been one motivation to promote secondary city development, the contentions that urban and rural development are inextricably related, that intermediate cities can play important roles as catalysts for rural development, and that a system of secondary cities can be important in achieving economic growth with social equity have been far more influential" (*ibid*:33).

(7) Increasing administrative capacity: Rondinelli argues that many developing countries are giving priority to the middle level of urban hierarchy for two reasons. First, it is the desire of the governments to expand the capacity of the secondary cities to perform service and production functions more efficiently and productively because many such cities have low levels of administrative capacity, poor planning and management capability, inefficient service delivery programs, and low levels of revenue raising capacity, and are dependent on the central government for authority and financial resources to perform even basic functions. Thus they cannot easily fulfil their potential roles in absorbing rural migrants and stimulating the rural economy (*ibid*:37). Examples of Panama, Costa Rica, Honduras, and Kenya are cited by the author where

governments are taking steps to develop secondary cities. A second reason for developing more secondary cities is the growing recognition of their importance for decentralizing development planning and management. Rondinelli further states that experiments with administrative decentralization in Sudan, Tanzania, and Kenya during the 1970's faltered for lack of cities of sufficient size, other than the national capital, to take up these responsibilities (*ibid*: 38). He further contends that a system of geographically dispersed secondary cities seems essential for the decentralization of private investment as well and that long-term consistent decentralization policies must precede deconcentration of private investment.

(8) Reducing urban poverty and increasing productivity:

By providing examples from Costa Rica, Egypt, Kenya, and Ecuador, Rondinelli states that much of the urban poverty in developing countries is found in intermediate and smaller cities. He cites a reference to Pakistan in a World Bank study that "[s]urveys of economic conditions in Pakistan point out that while the prime importance of attacking rural poverty cannot be denied, the incidence of urban poverty appears to be somewhat disturbing and deserves attention. The capacity of secondary cities to employ the poor must be improved both because migrants continue to flow into urban places to escape rural poverty and because their concentration in the largest cities creates potentially

severe social and political problems. Despite higher incomes, the number of urban poor is higher than a similar figure for rural areas. Cities continue to amass slums at an ever increasing rate; and what is more important, acute awareness of poverty in urban areas has bred considerable discontent expressed frequently in street violence" (ibid:40).

In his concluding remarks about the need for developing secondary cities, Rondinelli maintains that "[A] secondary city development strategy, by emphasizing the importance of place rather than of program, is a significant and innovative shift from the conventional emphasis on the need for planners to meet basic human needs largely by throwing money at them a development policy aimed at creating a productive system of settlements can meet social needs more effectively by expanding employment opportunities and generating income for the poor, allowing them to demand and obtain the services they need. A productivity-directed policy must be concerned with the economic and residential organization of the urban community, and thus it must be place oriented" (ibid:40-41).

c. The Functions of Secondary Cities

After discussing the case histories and case studies of 31 cities in 17 developing countries of East and Southeast Asia, Africa and the Middle East, and Latin America, Rondinelli indicates the following twelve important

functions of secondary cities in these countries:-

- (1) They can provide convenient locations for decentralizing public services through municipal governments, field offices of national ministries or agencies, or regional or provincial government offices, thereby creating greater access for both urban and rural residents to public services and facilities that require population thresholds of 100,000 or more. One of the primary benefits of decentralization is increased access to different services and facilities.
- (2) They can offer sufficiently large populations and economies of scale to allow concentration within them of health, education, welfare, and other services, and can act as regional or provincial centers for a variety of basic social services and facilities.
- (3) They usually offer a wide variety of consumer goods and commercial and personal services through small-scale enterprises and through extensive "informal sector" activities.
- (4) Many act as regional marketing centers offering a wide variety of distribution, transfer, storage, brokerage, credit, and financial services through their regularly scheduled and institutionalized markets or through periodic markets and bazaars.
- (5) They often provide conditions that are conducive to the growth of small- and medium-scale manufacturing and

artisan and cottage industries that can serve local markets and satisfy internal demand for low-cost manufactured goods, and some also support large-scale industrial activities.

- (6) Many act as agro-processing and agricultural supply centers for their regions and provide services to rural populations in their hinterlands.
- (7) They often create conditions -- through relatively high levels of population concentration, advantageous locations, marketing and agro-processing functions, linkages to rural communities -- that are conducive to the commercialization of agriculture and to increasing agricultural productivity and income in their immediately surrounding hinterlands. This is a very important function of secondary cities and should be considered vital for the success of any secondary city development approach.
- (8) They can be sources of off-farm employment and supplementary income for rural people and, through remittances of migrants, provide additional sources of income to people living in rural towns and villages in their regions. This may suggest that instead of rural people migrating to primary cities, they will now go to secondary cities. But rural to secondary city migration will not create as many or as serious a set of problems (urban congestion, underemployment of rural

people, squatter settlements, etc.) as created by rural to primate city migration. This is so because secondary and intermediate size cities have more growth potential as compared to primate cities. Also, these communities act as barriers to the movement of people to primate cities. They also offer more agro-based jobs (in which the village people are more trained) as compared to primate cities because secondary cities are more agro-oriented as compared to primate cities (due to the proximity of secondary cities to rural villages -- a more direct link with the rural hinterland as compared to primate cities).

- (9) They often serve as area-wide or regional centers of transportation and communications, linking their residents and those of rural villages and towns in their hinterlands to larger cities and other regions in the country.
- (10) They can absorb substantial numbers of people migrating from rural areas to urban centers, transforming a "rural-to-primate city" migration pattern to a "step-wise" pattern, and offer long-term or permanent residence to some migrants, thereby creating a more balanced distribution of urban population.
- (11) They can function effectively as centers of social transformation by: (a) accommodating social heterogeneity and encouraging the integration of people

from diverse social, ethnic, religious, and tribal groups; (b) accommodating organizations that help to socialize and assimilate rural people into city life, supporting them during their transition and mediating conflicts among them; (c) infusing new attitudes, behavior, and lifestyles that are more conducive to urban living; (d) providing opportunities for economic and social mobility; and (e) offering new economic and social opportunities for women.

- (12) They can be channels for the diffusion of innovation and change, the spread of benefits of urban development, the stimulation of rural economies, and the integration of urban centers and rural settlements within their regions through social, economic, and administrative linkages" (*ibid*:118-20).

They (i.e. secondary cities) may, in some cases, benefit maintain some degree of regional/cultural or regional/ethnic diversity and creativity. And if such a phenomenon takes place, then perhaps this can be a counter to the emergence of territorial-based political divisions (certainly a problem which Pakistan cannot afford to have).

d. Factors effecting the developmental impacts of secondary cities on their regions: It would be unrealistic to assume that merely developing a secondary city (i.e., a city of 100,000 population or more) in a poor region will boost the

economy of the city and its respective region. In reality, such an assumption may end up in a total failure. A number of factors should be considered before a secondary cities development policy is framed. In today's developing countries, a majority of these factors are political and social in nature. Rondinelli describes the following ten important factors effecting the "developmental" impacts of secondary cities on their regions:

- (1) the degree to which local elites and leaders identify their own success and status with the economic growth and Social progress of the city and its region;
- (2) the degree to which local leaders in both the public and private sectors are willing to invest their resources in the growth and development of the city rather than investing surpluses generated from city activities in other places (mostly primate cities and even abroad in some cases)
- (3) the degree to which local leaders and entrepreneurs are innovative and aggressive in introducing the more effective methods and techniques of production to increase output and income within the local economy;
- (4) the degree to which local leaders and entrepreneurs in both the public and the private sectors are aggressive, and successful, in bringing external resources into the city for development;
- (5) the degree to which the national government supports

- the internal growth and development of the city and its region, rather than draining resources from them to support the development of the national capital or the national economy;
- (6) the degree to which economic activities established within the city are linked through mutually beneficial processes of exchange to the city's hinterland, thereby serving the needs of rural people and promoting higher productivity and greater distribution of income for the rural population;
- (7) the degree to which economic activities are linked to each other within the city to generate "multiplier effects" in investment, employment, and opportunities for entrepreneurship in both large and small enterprises;
- (8) the degree to which economic activities within the city are organized to generate income for local residents and promote internal demand for goods and services that can be produced and distributed locally;
- (9) the degree to which public and private sectors cooperate in promoting economic activities that generate widespread participation and distribution of benefits; and
- (10) the degree to which the city's leaders are willing to promote and encourage -- and residents are willing to

accept and advance -- social and behavioral changes that are responsive to new conditions and needs as they arise" (*ibid*:182-83).

Rondinelli further cites examples describing three cities in developing countries to prove that if the above factors play their positive roles, overall community development is possible. These cities include: Chiangmai, Thailand (a city that seemed to have generated economic and social benefits for its own population and for that of its rural hinterland); Huancayo, Peru (a city that seemed to have exploited its own resources and that of its region during its growth); and Davao City, Philippines (a city that has been exploitational, but created conditions for potential development through "anticipatory urbanization") (*ibid*:184).

e. Policies for secondary city development: Rondinelli argues that there are no universally applicable or optimal settlement patterns and that each country must attempt to shape its settlement system to meet its own national economic and social objectives, within its own resource constraints, and at pace with its own economic, administrative, and technological capacities. Furthermore, secondary cities can play important roles in balancing the distribution of urban population and economic activities, in stimulating rural development, and in generating more socially and geographically equitable distributions of the benefits of urbanization when secondary urban centers are

economically strong and linked to each other and to larger and smaller settlements within their regions (ibid:197).

Three policies are recommended by the author:

- (1) Strengthening the economies of existing secondary cities by: (a) extending basic social services and municipal facilities and infrastructure that support productive activities and improve human resources. Top priority should be given to the expansion/introduction of educational institutions (both primary and secondary). Vocational training centers may be established to provide more job-oriented and technical training. (b) improving physical structure to make these cities more efficient and conducive to productive economic activities; (c) strengthening the economic base and employment structure; and (d) strengthening the planning, administrative, and financial capacity of local governments to manage urban development;
- (2) stimulating the growth and diversification of smaller towns and market centers to increase the number and geographic distribution of secondary cities within the national settlement system;
- (3) strengthening the physical, economic, social, and political linkages among secondary cities and between them and larger and smaller settlements to provide greater access to urban services, facilities, and job opportunities to people living in rural areas, and to

create an integrated system of urban centers through which the benefits of urbanization and economic development can be spread more widely.

2.4. The Agropolitan Development Approach: Friedmann and Weaver (1979) propose an "agropolitan development approach" which is based on meeting the basic needs of the rural people and involving them in the local decision making process. The authors state that suitable conditions for the application of the policy are:

"[d]ensely populated agrarian societies characterized by low profiles of social development, high rates of population increase, incipient urban-based industrialization, high external dependency, and arising indices of inequality. Such societies are typically found in Asia and parts of Africa" (*ibid*, p. 194).

The authors point out that an agropolitan approach is in some ways similar to the Chinese experience with rural commune development. While agreeing with the Chinese strategy, they state that "[t]he first-stage objective of the development should be organized on a territorial basis; that questions of production and distribution should be jointly solved; and that the resource base for the development of productive forces must be continuously expanded" (p. 194).

Above conditions do exist in the rural Punjab these days. Therefore, an application of the agropolitan approach to

this area will not be considered an unrealistic approach (although some modifications may be needed).

The major elements of the agropolitan approach are:

- (1) the basic conditions for its realization;
- (2) the territorial framework;
- (3) the expansion of production; and
- (4) the role of the state.

1. The basic conditions: The authors state that three basic conditions are essential to successful agropolitan development: (a) selective territorial closure, (b) the communalization of productive wealth, and (c) the equalization of access to the bases for the accumulation of social power (p. 195).

(a) **Selective territorial closure**: "[T]his refers to a policy of enlightened self-reliance at relevant levels of territorial integration: district, region, and nation it is an expression of faith in the abilities of the people to guide the forces of their own evolution. It means to rely less on outside aid and investment, to involve the masses in development, to initiate a conscious process of social learning, to diversify production, and to pool resources." (p. 195).

(b) **The communalization of productive wealth**: In poor agricultural societies of the developing countries, land and water sources are considered to be the sources of productive wealth. The full mobilization of available resources (e.g.,

land and water), which agropolitan development implies, is possible only where benefits from such an effort are understood to flow in roughly equal measure to everyone in the community. Where benefits are appropriated primarily for private use, so that the gains accrue unequally, even the initial effort is not likely to be made, and the productive potential of the community will be realized only in part (p. 195).

In the rural Punjab, land is not equally distributed. Those who own large parcels of land are often the local rural elites. Their power rests in the land they own. The land they own was given to them by the British and the Mughals in recognition of their support for the state and for extending their help in men and materials during critical times (such as war or mutinies). In most of the cases, the land they own was not acquired in a fair manner. The concept of fair ownership needs to be studied in a greater detail. Some research has been done which tries to address the important question of equitable distribution of land (Khan, 1981 and Gardezi, ed., 1983): Who has the right to own land - the landlord or the cultivator? One such piece of research states that:

"[H]aji Sahib's (a landlord in a village called Sahiwal in the Sargodha District of the Punjab) land traces its origin from an ancestral owner who died in 1883. When he acquired the title to his land from the British it was mostly scrub-

land, without irrigation. With the help of tenants and artisans, whom he brought to the village, he cleared, levelled and brought under cultivation a substantial part of his land. A private irrigation canal was also dug; users of this facility were required to pay 25% of their revenues in kind to Haji Sahib.... The ancestral owner rented out all land to tenant farmers in return for a fixed portion of their crops. He himself lived in Isa Khel (an urban area far from Sahiwal). The large landlords of the village have continued to be absentees, administering their lands through managers (intermediaries)" (Gardezi, 1983). The land given to the ancestors of the present landowner by the rulers of that time (the Mughals or the British) as a gift without any effort on the part of the original ancestor is clearly not an equitable distribution of land. But, if this argument is accepted by the government, then a vast majority of the large landlords will lose their land. This is rarely an objective of a government whose officials also belong to the same landowning class.

An agropolitan development strategy may only be successful if government is ready to distribute land equitably among all who earn their living from it. Only then will the idea of equitable distribution of land and water make any sense.

(c) **The equalization of access to the bases for the accumulation of social power:** Friedmann and Weaver

argue that people must be involved in producing, managing and using social power on a basis of equality and joint decision. This clearly means deviating from the present practice where decisions are taken and the destinies of the rural poor are decided by a handful of local and/or non-local power holders. To reverse this trend, and to accelerate the slow process of social and economic change, a socialistic and revolutionary approach will be needed.

2. The territorial framework: Territorially organized communities may be conceived on the basis of common cultural, political, and economic spaces or attributes. Agropolitan districts are the smallest of these units that are capable of providing their own basic needs (food, housing, clothing, etc.) to their inhabitants with a little help from the outside. The authors propose that:

"[I]n view of the need for face-to-face encounter in the governance of agropolitan affairs - a form of governance that concerns questions of both production and distribution, and mindful of a population density criterion that would require at least 200 persons per square kilometer of cultivated land - agropolitan districts may be designed to have a total population of between 15,000 and 60,000. The inclusion of a country town within the district would raise their totals by an additional 5 -20,000 people. Speaking in rough numbers, we suggest agropolitan districts that would range in population size from 20,000 to 100,000. This

derivation of agropolitan districts applies only to rural areas. In cities, agropolitan neighborhoods may be variously defined with approximately the same overall population limits. According to this procedure, many smaller towns will obviously fall within rural agropolitan districts, while medium-sized cities would constitute districts in their own right" (p. 197).

3. The expansion of production: Local production should be expanded such that it encourages more self-reliance for the agropolitan district and its region. Friedmann and Weaver give the following five basic principles of a self-reliant territorial development:

- (a) development should aim at diversifying the territorial economy;
- (b) development should aim at the maximum development of the physical resources consistent with principles of conservation;
- (c) development should encourage the expansion of regional and interregional (domestic) markets;
- (d) development should be based as much as possible on the principles of self reliance; and
- (e) development should promote social learning (p. 198).

4. The role of the state: The authors advocate an important idea of establishing political autonomy in agropolitan districts. "[S]elf-reliance requires self-finance, and self-finance calls for self-government. The political

autonomy of agropolitan districts is a fundamental principle and may be exercised through assemblies, with delegates sent by component functional and territorial units, representing productive and residential interests respectively" (p. 203). The role of the state is protective, developmental, facilitative, regulatory, and redistributive. It is protective by securing territorial boundaries; developmental by coordinating national policies for the benefit of each agropolitan district; facilitative through its own resources to support agropolitan districts in the realization of their own projects; regulatory by maintaining those critical balances within the system of social relationships that will permit both change and growth to occur without excessive disruption of the system as a whole; and it is redistributive because it takes surplus resources from rich districts to equalize redevelopment possibilities in less favored areas (p. 203).

A practical application of the agropolitan development approach has yet to be seen in the Punjab. However, Ul Karim (1985) states that:

"[T]he agropolitan theory with its stress on decentralization of decision making process, reliance on indigenous human and material resources, and gradual relaxation of elite control through diversification of economic base provides promising prospects for the improvement of the quality of life for the rural masses in

the Punjab" (p. 48).

But the agropolitan development approach may not seem fully applicable when the present conditions prevailing in the rural Punjab are considered. As our analysis of the rural-urban population distribution in the province will show, more and more rural settlements are becoming urban with the passage of time. The concentration of population in district headquarter cities and towns is increasing. This is a natural phenomenon of urbanization. There is a need for a policy which goes hand in hand with the present growth pattern of settlements and which tries to achieve equity given the present state of constraints. The demand is for locating more urban functions in the rural habitat. The conditions required for an agropolitan approach, although desirable, are too idealistic to implement and may not be practicable in the present state of affairs. The government will not take the drastic steps as proposed in this approach because the people who constitute the government are the ones who will be directly effected by such a policy. Revolutions like that of China do not take place very often. And an agropolitan development relies heavily on social change, land reform, and political will. This is possible if such a revolution takes place in Pakistan. But this is highly unlikely in the near future.

However, the secondary cities development approach will be more feasible if it is applied with some modifications to

the local conditions. The secondary cities approach can realistically provide an improved standard of living to the greatest number of people.

2.5. The Aga Khan Rural Support Program (AKRSP) in Pakistan

The Aga Khan Rural Support Program (AKRSP) was initiated in December 1982 by the Aga Khan Foundation (a private, non-denominational, philanthropic network established by His Highness the Aga Khan) for the purpose of implementing a rural development program in the northern areas (Gilgit, Chitral, and Baltistan Districts) of Pakistan. The area has a total population of about 750,000 located in 1,030 villages. The area comprises a series of inter-linked narrow valleys (between 4,500 and 10,000 feet above sea level). The climate is that of a mountain desert (4-10 inches of annual precipitation) with bitterly cold winters and hot dry summers. Agriculture is dependent on irrigation except for high altitude natural summer pastures. The villages are green oases constructed on river terraces, the "fans" of river valleys from the mountains (often terraced), watered by ingeniously constructed irrigation channels which tap streams flowing from the many glaciers as well as from springs and snow melt (World Bank, 1987: p. xii). The material presented in this section is taken from an interim evaluation of the program done by the Operations Evaluation Department (OED) of the World Bank.

Characteristics of the Program

The broad objective of the program is to increase the capacity of local people in the program area to make use of opportunities to improve their welfare and to overcome the problems facing them. The main focus of the development effort is on income-generating activities, toward meeting the program's stated objective of "[a] doubling of (rural) per capita incomes over a period of ten years" (p. xi).

The central feature of the program is the establishment of effective Village Organizations (VO). Once established, the VO enters into a formal partnership with AKRSP under which technical and financial assistance is provided. Out of about 1,030 villages in the program area, some 526 now have an active VO. Another essential element of the strategy is the one grant-assisted Productive Physical Infrastructure Project (PPI) per VO. The villagers select a PPI usually for the construction of irrigation channels or link roads (but storage tanks, flood protection works, and pony tracks have also been chosen). Some 393 PPIs have been started and 226 completed (*ibid*: p. xii).

Methods of implementation: The purpose of the program is to support the commercialization of previously subsistence villages by creating village level organizations, building productive physical infrastructure, establishing deposits to facilitate credit, providing production and marketing support systems and by training. The major programs of AKRSP

include:

- (a) the development of organizational skills and discipline;
- (b) The first Productive Physical Infrastructure (PPI) project
- (c) land development and long-term resource management planning;
- (d) human resource development and training;
- (e) agriculture and livestock development;
- (f) savings and credit;
- (g) marketing;
- (h) women's development; and
- (i) monitoring, evaluation and research (both socio-economic and technical) (p. xiii).

Program Performance

- (i) By June 1986, a total of 526 VOs had been established, with a membership of 38,180 households (321 in Gilgit, 168 in Chitral, and 37 in Baltistan). Some 110 separate women's Organizations were started in Gilgit District, but recognizing that women do not function separately from the household, AKRSP now encourages Women's organizations to merge with VOs.
- (ii) In the first four years of the program a total of 393 PPI's were initiated and 226 completed.
- (iii) The agriculture program has three sections: field crops and orchards, livestock, and forestry. There are two types of activity: (a) loss reduction and yield

development for current production, and (b) assistance for development of new lands irrigated by feeder channel PPI's. Fruit losses have been reduced by a training and a spray kit distribution program. Fifteen courses have trained 152 VO specialists in plant protection. Training in livestock management and treatment has been provided for 207 VO specialists, and 134,000 livestock have been vaccinated. Establishment of forest plantations is underway with 550,000 tree planted.

- (iv) Total savings by VOs amount to Rs. 14.5 million (Rs. 10.6 million in Gilgit, Rs. 3.5 million in Chitral, and Rs. 0.4million in Baltistan). Short-term credit extended over the four years amounted to Rs. 9.8 million in Gilgit, Rs. 2.02 million in Chitral, and 0.31 million in Baltistan. This has financed fertilizer, marketing, plants, seeds, and other inputs. Medium-term credit has financed mainly land development and agricultural machinery.
- (v) Marketing is being improved for locally produced fresh fruit, dried fruit, livestock and grains. Some 73 VOs (85 specialists) have participated in training courses in improved harvesting, grading and packing, and 2,250 households have benefited from AKRSP support for marketing operations. Grouping villagers for transport

and marketing purposes has been attempted, and the program will be broadened in future to include other products and other villages.

- (vi) AKRSP is currently benefitting 45 percent of the rural population of the three districts. Analyses of costs and benefits attempted by the AKRSP suggest that major components of the program are highly profitable for participants
(ibid: p. xiv).

Evaluation of the Program

An evaluation done by the World Bank (1987) indicates that the program has achieved a high degree of success. It states that "[t]he performance and achievements of AKRSP, as verified by the evaluation team, are impressive. The attitudes of the villagers have changed significantly and provide a favorable environment for program activities. These changed attitudes reflect four years of concerted effort and solid achievement The achievements are largely attributable to the effectiveness of the institution-building efforts at the village level. Several management principles are critical to this effectiveness. First is the principle of primacy of the village organization (VO). The VO is focal point of all the AKRSP activities but its sovereignty is sacrosanct, although AKRSP is firm in keeping to the agreed conditions of the partnership. The VO and AKRSP are seen as contractual partners where activities of

the VO's are supported but never undercut. Second is the principle of continued attention to innovations. Villagers and AKRSP staff alike are encouraged to innovate, using a trial and error approach that is carefully monitored. This creates a learning environment of active improvisation and innovation" (p. xv).

The above evaluation indicates that the program has achieved a considerable degree of success. Even the physical constraints of the area have been reduced to a lesser degree as a result of the policies adopted in this program. It would also be logical to conclude that AKRSP is working in accordance with the existing political and social structure of the project area; otherwise it would not have achieved a higher degree of success. The application of AKRSP in the Punjab may be possible after making necessary modifications.

SUMMARY AND CONCLUSION

A review of different regional development approaches reveals that central place and growth pole approaches have not met with much success in the Punjab. The secondary cities and agropolitan development approaches have not been tried in the province, but due to their basic assumptions and realistic approaches on which they are based, they seem more suitable, applicable and adaptable to the local conditions in the province. At the micro-level, the Aga Khan Rural Support Program has met with more success in the northern areas (outside the Punjab) of Pakistan. Some techniques of this

program are very useful in local community development and can be applied to the Punjab after making necessary modifications.

CHAPTER-III

RURAL DEVELOPMENT PROGRAMS AND THE ADMINISTRATIVE STRUCTURE IN THE PUNJAB

Scope of the Chapter

This chapter examines different rural development programs in the Punjab. It also examines the local level administrative structure in the Punjab, and relates it to the proposed Human Settlements Development Policy for the Punjab. This chapter also describes the administrative aspects of different Rural Development Programs in the Punjab, explains why these rural development programs have had limited success and, finally, explains the role of local administration in the limited success of these programs.

3.1. Problem Identification and need

Local level administration plays an important role in the implementation of rural development programs in the Punjab. There have been five major rural development programs (including establishment of rural development corporations and organizations by the Government) in the Punjab since 1952. None of these programs achieved the goals and objectives which were set forth at the beginning of each program. An inefficient structure of local level administration is one of the major factors responsible for the low degree of success of these programs (Ahmed, 1984:98). Local administration is just not fully capable of administering such programs¹. There are two aspects related to this problem. First, there is not enough technical staff

available at the local level to effectively administer the rural development programs. Second, the existing staff is already overloaded with other tasks and obligations that it finds very little time pay attention to these programs. In this way, both time and money are wasted on such programs and the end product is almost nil. There is, then a need for professional and technical people (i.e., Rural/Regional Planners)at the local level of government to administer any rural development program or policy. That is why an evaluation of the existing administrative structure is necessary to point out those administrative areas which require special attention (e.g., need an increase in the existing staff). This should be done before formulating any settlement policy for the Punjab.

3.2. Local Level Administrative Structure in the Punjab

The Punjab Province had 21 administrative districts and 75 Sub-Districts (or Tehsils) in 1981. The following is a listing of some of the basic facts about the Punjab as given in the 1981 census of population.

BASIC FACTS (THE PUNJAB, 1981)

- Population = 47.2 million
- Area = 78,030 square miles
- Population Density = 606 persons/sq. mile
- Rural Population = 72.2 %
- Average Household Size = 6.4 persons

FIGURE 3.1: LEVELS OF LOCAL ADMINISTRATION IN THE PUNJAB

- (1) Provincial Level
- (2) Divisional Level
- (3) District Level
- (4) "Tehsil" (or Sub-district) Level
- (5) Union Council Level
- (6) Village Level

Source: Weidner, Edward W. Development Administration in Asia, (Durham, North Carolina: Duke University Press, 1970).

Table 3.1: LOCAL GOVERNMENT ADMINISTRATION AND ADMINISTRATIVE LEVELS IN THE PUNJAB

Sr. No.	ADMINISTRATIVE POSITION	LOCAL ADMINISTRATIVE LEVEL
1.	<u>Commissioner</u>	Divisional
	- Additional Commissioner	Divisional
2.	<u>Deputy Commissioner</u>	District
	- Extra Assistant Commissioner	District
3.	<u>Assistant Commissioner</u>	Sub-Division
4.	<u>Head of Sub-District Level Admn./ "Tehsildar"</u>	Sub-District/Tehsil --
	- Naib or assistant Tehsildar	Sub-District/Tehsil
5.	<u>Supervisory Revenue Collecting Officer or Kanungo (SRCO)</u>	Sub-District/Tehsil --
6.	<u>Revenue Collecting officer or "Patwari"(RCO)</u>	Revenue Collecting (or Patwar) Circle
7.	<u>Headman (or "Lumberdar")</u>	Village
8.	<u>Watchman (or "Chokidar")</u>	Village

SOURCE: Same as in figure 3.1.

- Average number of persons per district
= 2,252,000
- Average number of persons per tehsil
= 630,560

The population of the Punjab had an annual average growth rate of 2.75 percent during 1972-1981 and a growth rate of 3.4 percent during the period 1961-1972.

The different local administrative levels are shown in figure 3.1. The most important levels are District, Sub-District (tehsil), Union council, and village levels. The local level administrative positions are shown in table 3.1. The most important administrative positions in this administrative hierarchy are the ones from serial number 2 through 6. The heads of sub-district level administration and the revenue collecting officers form an important part of the district administration. These persons are trained in revenue collecting techniques and keeping records of land transactions. But they are not trained to administer and coordinate the different rural development programs and other related policies. As a result, the development process is slow and sometimes a total failure. Even if some rural development officers are appointed, they rarely get necessary support from the local administration and related departments.

3.3. Rural Development Programs in the Punjab

A review of rural development programs is important to

help us understand the basic approach the planners adopted in their attempts to improve the condition of the rural economy. The existence of extreme poverty in the rural areas compelled planners to suggest different schemes and programs throughout the last four decades whereby the economic plight of the rural population could be improved, especially that of the small farmers, the tenants, and the landless labors. A review of existing rural development programs is important to help us understand the basic approach the planners adopted in their attempt to improve the condition of the rural economy. The limited success of each program which was implemented only led planners to suggest new approaches, in many cases without seriously considering the factors responsible for their failure. The administration of these programs was one of the major factors responsible for their limited success (Ahmed: 1984).

3.3.1. The Village Agricultural and Industrial Development Program (Village AID) (1952-1969)

The village aid program was initiated in 1953 to improve the social and economic condition of villages through community development methods. The first five year plan (1955-1969) gave a very high priority to rural development and strongly supported the Village AID program. All this was to be done mainly through the initiative and energy of village people themselves, cooperating and pooling their own resources. The government was to provide the assistance to village workers

under the leadership of "development workers" who were to help the villagers in making plans for local development and in organizing themselves to carry these out. The government was also to provide the services of specialists from different governmental departments - agriculture, animal husbandry, health, and so on - and some funds and materials to enable the villagers to carry out work which they otherwise could not do.

Some rural areas called development areas were to be selected for intensive development. Each development area was to consist of 150-200 villages with a total population of about 100,000 and placed in the charge of a development officer who was to have at his disposal the services of farm management, animal husbandry, co-operation and marketing, health and sanitation specialists. He was also to direct the activities of the village workers, each of whom were to be responsible for five to seven villages. The most important objectives the Village AID program set itself were:

- (a) To increase the output and income of the villagers through better methods of farming and to expand cottage industries;
- (b) To create a spirit of self-help, initiative and co-operation among the villagers, a spirit that can be the basis for continuing economic, social and political progress;
- (c) To multiply the community services available in rural

areas such as schools, health centers, and pure water supply system;

(d) To create conditions for a richer and better life through social activities including recreation for men and women.

In spite of a variety of goals set for the program, the Village AID program did not have much success with the achievement of its goals and objectives. The major shortcoming of the program and its limited success was attributed to administrative failure. It was due to a shortage of technical personnel and lack of proper coordination among the various government departments at the local level. Moreover, the program expected too much from the people in the form of voluntary work. Further, the whole of the leadership was imposed from outside rather than evolving from within the village community.

3.3.2. Basic Democracies/Rural Works Program (1962-69)

The limited success of Village AID program was considered to be due to the absence of local leadership and the development and growth in institutions within the rural society. The program of basic democracies was initiated by 1959 to combine the aspects of community development with political development and to create the representative local bodies at four different levels. The lowest level was a union council consisting of a group of small villages. The

higher level of the councils (Tehsil Council, District Council and Divisional Council) were dominated by the nominated or official workers. The union councils were given some limited judicial and taxation powers. The four tiers of local government were hierarchically arranged and the higher tier enjoyed the regulatory powers over the lower one in the development functions. According to Ul Karim (1985), the activities of the councils were marred by personal greed and factionalism based on caste groups.

3.3.3. Integrated Rural Development Program (IRDP)

The integrated rural development program was formally launched by the government of Pakistan in July 1972. To serve the target group more effectively, the program suggests two types of organizations to operate concurrently in the rural areas. These organizations are:

- (i) A local government setup which would contribute to political stability, generate a sense of participation among the people, and provide a structure for the articulation of local needs and their subsequent transfer to provisional and federal governments;
- (ii) A co-operative system which would enable the people to organize themselves at the village and markaz levels to meet their immediate economic needs.

The administrative setup at different levels of IRDP

1. **Primary unit:** The lowest unit, where farmers can get together for operational performances, is the village or

group of villages. At this level, the main task is to organize the people for the purpose of identification of needs, formulation of action plans, and development of local resources for self management of the project.

2. Markaz (or center): The hub of development activities is a Markaz (or Center). It is established at a focal point which has the potential to develop into an agroville for providing necessary support facilities to the surrounding villages. The markaz is coterminous with the basic tier of the local government system to ensure popular participation at grass root level.

3. District Level: The selected district council is responsible for financing, supervising, coordinating, and evaluating the development project in the district.

4. Provisional Level: The local government and the rural development department at the provisional headquarters is responsible for setting operational targets, formulating policies, allocating required funds for rural development, and monitoring markaz plans in the provinces. The rural development board presided over by the provisional chief executive, co-ordinates and evaluates the work of various departments in the field of rural development. The board is also responsible for policy making, budgeting, and approval of plans in keeping with national priorities.

To meet immediate economic needs, the arrangement was made in the integrated rural development program to organize

and administer multi-purpose village co-operatives that would initiate group action to secure economic and social services for their members. A hundred and thirty seven centers were set up during 1972 to 1977. In the absence of local government administrative institutions efforts were also made to organize people into village co-operatives.

An evaluation of the integrated rural development program was done by Qadeer (1977) based mainly on two centers in the Punjab. In his conclusion he states:

"[T]he integrated rural development program has attracted the same class of rural bourgeoisie, which normally appropriate any public development program. In this case, the voluntary association with the co-operative group societies were ad-hoc functional groups which could seldom be credited with local representatives. Whatever little benefits the integrated rural development program confers are most probably being appropriated by the middle and upper classes" (p. 25).

3.3.4. People's Works Program (PWP)

The people's works programme was introduced by the government in 1973. It aimed at enhancing employment opportunities and improving rural infrastructure. The program was not successful in generating employment and improving rural infrastructure due to a number of reasons. First, the main reason for the low employment generation was the overwhelming reliance, for the construction of roads and

buildings, on contractors who preferred to use capital-intensive methods to avoid labor management difficulties. Second, the projects undertaken by the PWP were small and widely scattered, and therefore the impact of the program was not very visible. However, the program satisfied some local needs such as roads and water supply. (Salam, 1980)

3.3.5. Agroville Development Program

The pattern of urban development in Punjab indicated the rapid increase of population in a few large cities and a weakening of the traditional distribution of population in small urban settlements. In order to limit rapid migration from villages to large cities, it was considered necessary to develop small towns and medium sized cities through the location of new productive enterprises and the provision of education, health, water supply, waste disposal, energy, transport, and other services. The successful development of small towns in rural development was expected to reduce the movement of population, prevent large scale transfer of people to metropolitan areas, and develop small urban settlements. For this purpose a new program called the "Agroville Development Programme" was launched in 1973.

According to Ahmed (1984),

"[T]he achievements of this program have been extremely modest. So far only five sites are reported to have been developed. When the scheme was launched in 1973, it was contemplated that under the IRDP, the center (markaz) will

ultimately develop in agrovilles and absorb surplus farm labor from the surrounding rural areas by providing employment opportunities in various areas. However, because of administrative, organizational, and financial constraints, the program was not able to take off properly" (p. 98).

CONCLUSION

All the five major rural development programs discussed above met with a limited success in the Punjab. A review of these programs, as it is done by different scholars, reveals that poor management of administrative, organizational, and financial capabilities of the governmental resources were important factors responsible for a low degree of programs success. Therefore, it is necessary that before initiating any new program, proper attention should be given to the above three factors. A new program should never be initiated if planner feels that the existing administrative, organizational, and financial constraints may not change to benefit the program. In this way, the already scarce resources available to the community may be saved for some other productive tasks and not for devising a useless rural development program which may be more tuned to the interests of a small group of rural elites with little or no attention paid to the general public interest.

CHAPTER-IV

A HUMAN SETTLEMENTS DEVELOPMENT POLICY FOR THE PUNJAB

Scope of the chapter

This chapter proposes a Human Settlements Development Policy (HSDP) for the Punjab. It analyzes the existing settlement system by applying Hoover's Index of Population Concentration and identifies the secondary cities by applying the secondary cities identification criteria as proposed by Rondinelli (1983). It also identifies the settlements which should be given priority in the allocation of development expenditures. In the end, detailed policies and recommendations are given for the development of human settlements in the Punjab. This is also done by using the secondary cities development approach.

4.1. Hoover's Index:

Hoover's Index (HI) (Petsimeris, 1986: pp. 58-59) is used to calculate the concentration of population in a particular settlement system. It is calculated by using the following relation:

$$H = (1/2) \sum |P(i)-A(i)| \times 100; \quad i=1, 2, 3, \dots, n.$$

Where

P = Ratio of sub-area (tehsil) population to the total (district) population;

A = ratio of the sub-area surface (i.e., area of a particular tehsil in sq. km.) to the total surface (i.e., total area of the corresponding district in

TABLE 4.1: Calculation of the Hoover's Index for all the tehsils of the Punjab.

DISTRICT/ Tehsil	AREA IN SQ. KM.	(1) (2)	POPULATION IN THOUSANDS)	HOOVER'S INDEX						DISTRICT/ Tehsil (11)	PROVINCE (TOTAL)	
				1951	1961	1972	1981	1951	1961	1972	1981	
PUNJAB PROVINCE (TOTAL)	205344	20541	25464	37607	47292	—	—	—	—	—	—	PUNJAB
ATTACK DISTRICT	9789	630	700	982	1144	1.16	1.04	0.87	0.91	0.80	0.72	ATTACK
Attcock tehsil	1699	233	243	345	416	0.15	0.18	0.43	0.60	0.43	0.60	tehsil
Fateh Jang tehsil	1249	84	94	129	149	0.10	0.08	0.01	0.05	0.17	0.05	Fateh Jang tehsil
Pindi Sheb tehsil	3727	164	190	267	303	0.51	0.45	0.26	0.17	0.17	0.17	Pindi Sheb tehsil
Tala Gang tehsil	3114	149	173	241	276	0.40	0.34	0.17	0.09	0.19	0.11	Tala Gang tehsil
RWALPINDI DISTRICT	5286	872	1086	1745	2121	0.84	0.03	0.06	3.88	0.84	0.03	RWALPINDI DISTRICT
Gujar Khan tehsil	1457	210	232	348	361	0.16	0.21	0.49	0.52	0.16	0.21	Gujar Khan tehsil
Kahuta tehsil	1180	124	146	219	249	0.01	0.07	0.25	0.32	0.01	0.07	Kahuta tehsil
Murree tehsil	654	99	117	186	223	0.08	0.13	0.29	0.38	0.08	0.13	Murree tehsil
Rawalpindi tehsil	1995	439	591	992	1266	0.58	0.95	1.93	2.65	0.58	0.95	Rawalpindi tehsil
JEHLUM DISTRICT	7179	679	749	1052	1167	0.26	0.21	0.81	1.09	0.26	0.21	JEHLUM DISTRICT
Chakwal tehsil	2620	222	243	326	368	0.10	0.05	0.16	0.26	0.10	0.05	Chakwal tehsil
Jhelum tehsil	2239	266	291	424	470	0.08	0.14	0.47	0.58	0.08	0.14	Jhelum tehsil
Pind Dadan Khan tehsil	191	215	302	329	329	0.09	0.02	0.19	0.26	0.09	0.02	Pind Dadan Khan tehsil
(67) GUJRIAT DISTRICT	5865	1158	1326	1899	2255	1.39	1.80	3.19	4.06	1.39	1.80	GUJRIAT DISTRICT
Gujrat tehsil	1463	357	433	625	746	0.61	0.70	1.17	1.46	0.61	0.70	Gujrat tehsil
Kharian tehsil	1729	346	402	552	663	0.42	0.56	0.92	1.19	0.42	0.56	Kharian tehsil
Phalia tehsil	2673	415	491	722	846	0.36	0.54	1.11	1.41	0.36	0.54	Phalia tehsil
SARGODHA DISTRICT	12367	1161	1468	2101	2553	1.68	1.97	2.62	3.24	1.68	1.97	SARGODHA DISTRICT
Bhalwal tehsil	2115	311	376	522	634	0.24	0.40	0.76	1.03	0.24	0.40	Bhalwal tehsil
Khushab tehsil	6533	271	364	548	646	0.93	0.70	0.26	0.02	0.93	0.70	Khushab tehsil
Sar Godha tehsil	2143	404	511	719	899	0.46	0.72	1.23	1.67	0.46	0.72	Sar Godha tehsil
Shah Pur tehsil	1576	175	217	312	374	0.04	0.14	0.36	0.53	0.04	0.14	Shah Pur tehsil
MIANWALI DISTRICT	13993	550	747	1096	1377	2.06	1.58	0.94	0.80	2.06	1.58	MIANWALI DISTRICT
Bhakkar tehsil	9153	334	333	501	666	1.41	1.17	0.76	0.36	1.41	1.17	Bhakkar tehsil
Isa Khel tehsil	1863	76	96	154	159	0.26	0.21	0.07	0.06	0.26	0.21	Isa Khel tehsil
Mianwali tehsil	3977	240	318	441	552	0.38	0.19	0.10	0.37	0.38	0.19	Mianwali tehsil
FAISLAHABAD DISTRICT	9103	2152	2684	4242	4689	3.02	4.31	8.10	9.19	3.02	4.31	FAISLAHABAD DISTRICT
Faisalabad tehsil	20063	702	1023	1705	2050	1.21	2.00	3.66	4.50	1.21	2.00	Faisalabad tehsil

TABLE 4.1 (cont.)

DISTRICT / Tehsil (1)	AREA IN SQ. KM. (2)	HOOVER'S INDEX						DISTRICT / Tehsil (11)		
		1951 (3)	1961 (4)	1972 (5)	1981 (6)	1951 (7)	1961 (8)	1972 (9)	1981 (10)	
Jaranwala tehsil	1811	438	483	738	761	0.62	0.73	1.35	1.41	Jaranwala tehsil
Samundari tehsil	2037	409	484	721	751	0.49	0.68	1.25	1.33	Samundari tehsil
Toba Tek Singh tehsil	3252	603	694	1078	1127	0.67	0.89	1.83	1.95	Toba Tek Singh tehsil
JHANG DISTRICT	8809	876	1079	1561	1978	0.33	0.48	1.65	2.66	JHANG DISTRICT
Chinot tehsil	2643	330	397	571	694	0.15	0.32	0.74	1.04	Chinot tehsil
Jhang tehsil	4153	363	442	631	816	0.12	0.06	0.52	0.97	Jhang tehsil
Shorkot tehsil	2013	183	240	359	468	0.04	0.09	0.38	0.64	Shorkot tehsil
KASUR DISTRICT	3995	760	854	1186	1528	0.87	1.10	1.91	2.74	KASUR DISTRICT
Kasur tehsil	2929	369	435	587	736	0.18	0.34	0.71	1.07	Kasur tehsil
Chunian tehsil	1056	391	419	599	792	0.69	0.76	1.20	1.67	Chunian tehsil
GUJARANWALA DISTRICT	5988	1047	1292	2060	2676	1.09	1.68	3.55	5.05	GUJARANWALA DISTRICT
Gujarawala tehsil	2426	578	745	1245	1666	0.81	1.22	2.43	3.46	Gujarawala tehsil
Hafizabad tehsil	2366	252	292	444	568	0.03	0.13	0.50	0.80	Hafizabad tehsil
Wazirabad tehsil	1196	217	255	371	442	0.23	0.32	0.61	0.78	Wazirabad tehsil
SHEIKHUPURA DISTRICT	5960	923	1081	1657	2110	0.69	1.18	2.58	3.68	SHEIKHUPURA DISTRICT
Sheikhupura tehsil	1902	454	531	841	1051	0.64	0.82	1.58	2.09	Sheikhupura tehsil
Nankana Sahib tehsil	1662	249	290	419	510	0.20	0.30	0.61	0.83	Nankana Sahib tehsil
Ferozuala tehsil	2396	220	260	397	549	0.04	0.04	0.38	0.75	Ferozuala tehsil
LAHORE DISTRICT	1772	1135	1626	2588	3545	2.33	3.52	5.86	8.19	LAHORE DISTRICT
Lahore tehsil	1772	1135	1626	2588	3545	2.33	3.52	5.86	8.19	Lahore tehsil
SIALKOT DISTRICT	5353	1474	1596	2344	2711	2.28	2.58	4.40	5.29	SIALKOT DISTRICT
Daska tehsil	1026	291	332	490	574	0.45	0.55	0.94	1.14	Daska tehsil
Narowal tehsil	1065	252	266	386	443	0.35	0.38	0.68	0.91	Narowal tehsil
Pasroor tehsil	978	252	257	374	426	0.37	0.38	0.67	0.79	Pasroor tehsil
Shakargarh tehsil	1272	261	284	448	466	0.32	0.38	0.76	0.82	Shakargarh tehsil
Sialkot tehsil	1012	418	457	646	802	0.77	0.86	1.32	1.70	Sialkot tehsil
MULTAN DISTRICT	10847	1650	2122	3138	4030	1.37	2.52	4.96	7.29	MULTAN DISTRICT
Kabirwala tehsil	1804	251	310	403	523	0.17	0.31	0.54	0.83	Kabirwala tehsil
Khanewal tehsil	2545	384	465	665	847	0.31	0.51	0.99	1.44	Khanewal tehsil
Lodhran tehsil	2778	389	364	559	740	0.02	0.20	0.68	1.12	Lodhran tehsil

TABLE 4.1 (cont.)

DISTRICT/ Tehsil	IN SQ. KM.	(1)	(2)	(3)	HOODER'S INDEX						DISTRICT/ Tehsil	(11)	
					(POPULATION IN THOUSANDS)	HI 1951	HI 1961	HI 1972	HI 1981	HI 1961	HI 1972	HI 1981	
		(4)	(5)	(6)	(7)	(8)	(9)	(10)					
Shujabad tehsil	1936	219	263	391	503	0.06	0.16	0.48	0.75	Shujabad tehsil			
Multan tehsil	1784	507	721	1115	1467	0.79	1.32	2.27	3.13	Multan tehsil			
SAHIBWAL DISTRICT	10303	1715	2011	2684	3612	1.66	2.38	4.02	6.28	SAHIBWAL DISTRICT			
Chichawatni tehsil	1610	262	321	412	553	0.24	0.38	0.61	0.95	Chichawatni tehsil			
Deraulpur tehsil	2503	306	332	500	669	0.13	0.19	0.60	1.01	Deraulpur tehsil			
Oksara tehsil	1875	424	495	624	818	0.57	0.74	1.06	1.53	Oksara tehsil			
Pakpattan tehsil	2724	381	440	616	844	0.26	0.40	0.83	1.39	Pakpattan tehsil			
Sahiwal tehsil	1591	342	423	532	728	0.44	0.64	0.90	1.38	Sahiwal tehsil			
VEHARI DISTRICT	4364	659	703	1027	1329	0.29	0.64	1.43	2.17	VEHARI DISTRICT			
Burewala tehsil	1295	200	265	369	473	0.17	0.32	0.58	0.83	Burewala tehsil			
Mailsi tehsil	1639	185	226	341	442	0.05	0.14	0.43	0.67	Mailsi tehsil			
Vehari tehsil	1430	174	213	317	414	0.07	0.17	0.42	0.65	Vehari tehsil			
MUZAFFARGH DISTRICT	14538	751	990	1585	2164	1.71	1.39	1.08	1.72	MUZAFFARGH DISTRICT			
Rajipur tehsil	2401	211	241	336	473	0.07	0.00	0.23	0.56	Rajipur tehsil			
Kot Addu tehsil	3471	143	185	313	449	0.49	0.39	0.08	0.24	Kot Addu tehsil			
Lieiah tehsil	6289	162	273	496	667	1.13	0.96	0.32	0.05	Lieiah tehsil			
Muzaffargh tehsil	2377	235	291	420	575	0.00	0.12	0.44	0.82	Muzaffargh tehsil			
D. G. KHAN DISTRICT	24240	628	777	1142	1583	4.37	4.01	3.52	3.50	D. G. KHAN DISTRICT			
De-excluded Area	10352	45	52	65	104	2.41	2.39	2.36	2.26	De-excluded Area			
D. G. Khan tehsil	3814	238	311	464	636	0.34	0.17	0.20	0.61	D. G. Khan tehsil			
Jampur tehsil	2322	112	129	201	276	0.29	0.25	0.07	0.10	Jampur tehsil			
Rajapur tehsil	4983	132	168	250	341	0.89	0.80	0.60	0.38	Rajapur tehsil			
Taunsa tehsil	2769	101	117	162	226	0.42	0.38	0.27	0.12	Taunsa tehsil			
BATHAWALPUR DISTRICT	24830	528	736	1071	1453	4.76	4.25	3.43	2.50	BATHAWALPUR DISTRICT			
Amadpur tehsil	5920	189	241	344	444	0.98	0.85	0.60	0.36	Amadpur tehsil			
Bahawalpur tehsil	15474	212	327	456	695	3.25	2.97	2.56	2.07	Bahawalpur tehsil			
Hassilpur tehsil	3436	128	168	231	314	0.52	0.42	0.27	0.07	Hassilpur tehsil			
BATHAWALPUR DISTRICT	8873	630	823	1074	1374	1.60	1.59	1.67	1.77	BATHAWALPUR DISTRICT			
Bahawalnagar tehsil	1729	182	229	309	367	0.02	0.13	0.33	0.47	Bahawalnagar tehsil			
Chishtial tehsil	1500	149	198	255	327	0.00	0.11	0.25	0.48	Chishtial tehsil			

TABLE 4.1 (cont.)

DISTRICT / Tehsil	AREA IN SQ. KM.	POPULATION IN THOUSANDS			HOOVER'S INDEX				
		1951	1961	1972	1981	HI	HI	DISTRICT / Tehsil (11)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Fort Abbas tehsil	3831	65	102	136	196	0.77	0.68	0.60	0.45
Haroabad tehsil	3831	115	156	188	258	0.65	0.55	0.47	0.30
Mirchinabad tehsil	1818	119	138	186	226	0.15	0.10	0.01	0.10
Rahim Yar Khan District	11880	664	1016	1399	1841	1.28	0.79	0.61	1.58
Khanpur tehsil	3190	106	228	325	421	0.51	0.22	0.01	0.24
Liaquatpur tehsil	3262	145	228	305	395	0.44	0.23	0.05	0.16
Rahim Yar Khan tehsil	2464	248	323	437	575	0.00	0.18	0.46	0.79
Sadiqabad tehsil	2964	163	237	382	450	0.32	0.14	0.08	0.37

HOOVER'S INDEX (H)

$$H = (1/2) \sum (P(i) - R(i)) \times 100$$

Where

$$(70) \quad n = \text{number of sub-areas (Tehsils)};$$

 $P = \text{Ratio of sub-area (tehsil) population to the total (district) population};$ $R = \text{Ratio of the sub-area (tehsil) surface area in sq. km. to the total district (surface); and}$ $n = \text{number of sub-areas (tehsils) in an individual district}.$

SOURCE: Census of Population, Punjab (1951, 1961, 1972, 1981).

sq. km.);

n = number of sub-areas (i.e., number of tehsils in a particular district); and

H = Hoover's Index.

The larger the value of the Hoover's Index, the larger will be the concentration of population in a particular area and conversely, the smaller the value, the smaller will be the concentration of population. In Table 4.1., the HI is calculated for all of the 21 districts and 75 tehsils (sub-districts) of the Punjab. Columns 7 through 10 show the HI for these areas from 1951 to 1981. An analysis of the table reveals that the HI is increasing not only for the major urban (primate) districts and sub-districts/tehsils of Lahore, Rawalpindi, Gujranwala, Faisalabad, Multan, but also for less urban areas such as the sub-districts/tehsils of Jhang, Sargodha, Sahiwal, Okara, Kasur, Sheikhupura, and Sialkot. Therefore, it would not be logical to conclude that the population is only concentrating in a few large urban centers. On the other hand, the population is also concentrating in settlements in the lower order. For example, the HI of Lahore tehsil, the largest urban center in the province, increased from 3.52 in 1961 to 8.19 in 1981 (an increase of 132%). But for the Jhang tehsil, an area of second order in the Jhang district, the same index showed a much larger increase of 151% during the same time period. This clearly suggests that the relative increase in the

concentration of population within the district of Jhang was more than within the Lahore district. The concentration of population in secondary cities may suggest that more economies of scale can be achieved in these settlements as compared to primate cities. The unit cost of producing a good may be less in a secondary city as compared to small rural villages or large urban centers. There may be diseconomies with public services in the very large urban centers. A higher value of concentration of population in secondary cities suggest that cheap labor may be available in an intermediate sized city as compared to a large urban center. Hence a settlement policy should identify such secondary areas in the settlement system which may be termed as "overachievers", i.e., those settlements/areas which are achieving more than expected. The next section identifies such areas.

4.2. Identification of Secondary Cities in the Punjab

An identification of the secondary cities is done by using the secondary cities development approach as advocated by Rondinelli (1983). He defines secondary cities as cities having population of 100,000 or more which do not include the largest primate city (or cities). For the present study, five major urban centers are excluded while identifying the secondary cities. These urban centers include: Lahore, Rawalpindi, Faisalabad, Multan, and Gujranwala. These centers are excluded because they are already getting a large

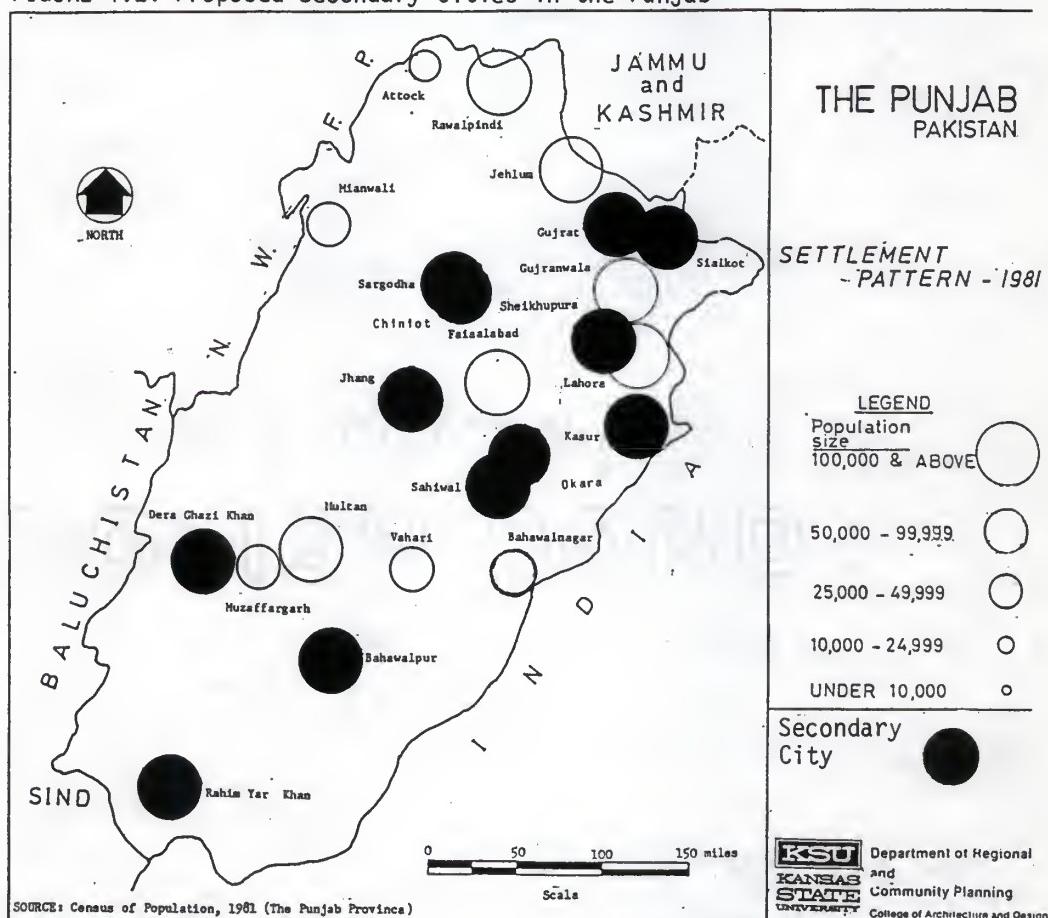
TABLE 4.2: Secondary Cities in the Punjab

SECONDARY CITY	POPULATION 1981	POPULATION RANK
Siakkot	258,147	1
Sargodha	231,895	2
Jhang	195,558	3
Kasur	155,523	4
Gujrat	155,058	5
Bahawalpur	152,009	6
Sahiwal	150,954	7
Sheikhupura	141,168	8
Okara	127,455	9
Rahim Yar Khan	119,036	10
Chiniot	105,559	11
Dera Ghazi Khan	102,007	12

(73)

SOURCE: Handbook of population (1981),
Population Census Organization,
Punjab.

FIGURE 4.2: Proposed Secondary Cities in the Punjab



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College of Architecture and Design

share of the annual development budget. A total of 12 secondary cities have been identified in Table 4.2. This system of secondary cities is ranked according to their respective population. The city of Sialkot with a population of 258,147 is the highest ranking city (with rank of 1) in the system and Dera Ghazi Khan with population of 102,007 is the lowest ranking city (with a rank of 12) in this system of cities. The proposed secondary cities are shown in Figure 4.2. The economies of these cities should be strengthened by extending the basic social services and municipal facilities and infrastructure that support productive activities and improve human resources. The smaller settlements surrounding these cities should also be developed after enough resources are utilized for the secondary cities (if enough resources are available for the development of these small settlements after allocating funds for the higher order secondary cities). For example, proper physical, social, economic, and political linkages should be strengthened between the city of Sialkot (a secondary city of population 258,147) and other small towns in the area (i.e., within the same district). This includes the following 14 small towns and settlements:

Daska (pop. 55,555), Sambrial (pop. 24,432), Jamke Cheema (pop. 14,848), Bhopalwala (pop. 10,641), Begowala (pop. 6993), Narowal (pop. 35,125), Baddomalhi (pop. 13,244), Zafarwal (pop. 10,464), Qila Sobha Singh (pop. 6,377), Pasrur (pop. 26,087),

Chawinda (13,185), Shakargarh (pop. 25,484), and Kotli Loharan (pop. 12,836).

A similar approach should be adopted for the rest of the 20 districts in the province.

4.3. HUMAN SETTLEMENTS DEVELOPMENT POLICIES AND RECOMMENDATIONS FOR THE PUNJAB

A number of recommendations and policies can be formulated to improve the present settlement system in the Punjab. These policies should be framed both at micro and macro levels of the settlement system. Also, these policies should include various important physical, social, economic, political, and technical aspects of settlement development planning. For example, only considering the physical factors will narrow our approach and hinder the solution of the complex and interrelated problems involved in human settlement planning in the developing countries in general and the Punjab in particular. This section suggests settlements development policies and proposals both at the micro and macro levels of the settlement system in the Punjab. An attempt is made to adopt a comprehensive approach in proposing such policies and programs. Furthermore, references are drawn from the related material available on developing countries. Some of these policies are proposed by Rondinelli (1985) for the Bicol River Basin Development Program in the Philippines. Some policies are also based on the approach adopted in the Aga Khan Rural Support Program

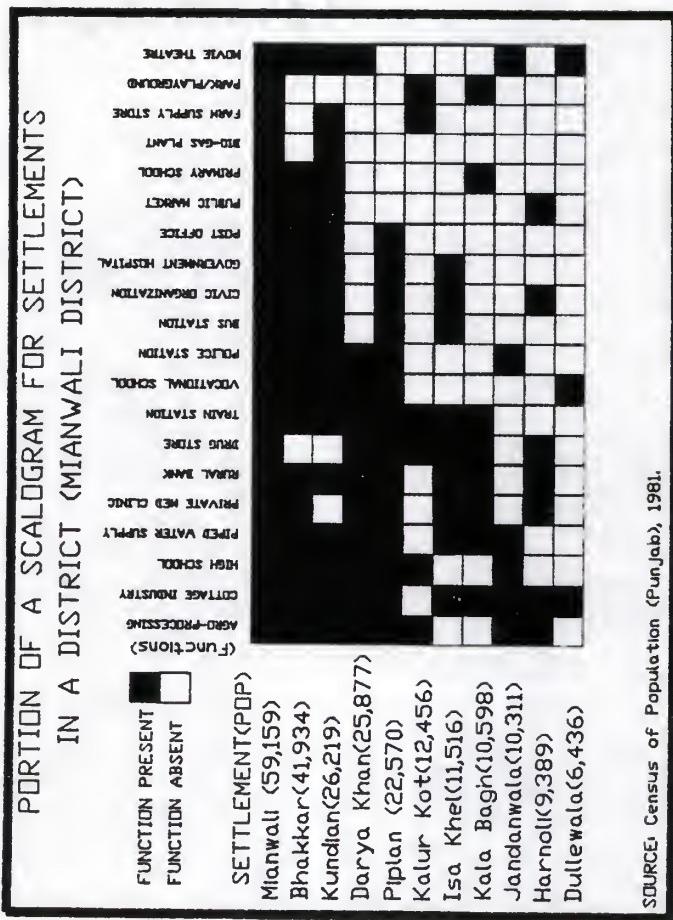
(World Bank, 1987) in the northern areas of Pakistan.

- (1) Identification of Secondary Cities: All the secondary and intermediate cities in the Punjab are identified and ranked according to their population size. Investment and funds allocation decisions should then be made by giving priority to those secondary cities which are overachieving (e.g., their population is increasing more than expected) as compared to the other settlements in the settlement system. Productive investments by the Government should be made in such cities in the form of locating and strengthening the basic facilities and utilities. For example, investments can be made in constructing new roads, water and sewer systems, low-cost housing, community centers, primary schools, vocational and technical centers, agro-processing and bio-gas plants, poultry and sheep farming and other productive activities.
- (2) Creation of Data Banks: Data banks should be created for each individual settlement. This includes all the municipal committees and the town committees in the Punjab. The existing census information is not enough to conduct effective analyses. The Punjab Housing, Physical, and Environmental Planning Department should be responsible providing such data banks. The data to be collected may include such indicators as size of the skilled and un-skilled labor force; individual income

and saving patterns; educational and skill levels; migration patterns, the traffic capacity of all the existing roads and streets; and existing land use, industrial, commercial, and housing patterns. The future development policies and priorities will base on this data.

- (3) Comprehensive Plan and Zoning regulations: A Comprehensive Plan should be framed for each Municipal Committee (MC) and Town Committee (TC). Detailed zoning and land sub-division regulations should also be devised for each MC and TC to regulate the land development. This will help promote the general health, welfare, safety, and the public interest in the community.
- (4) Population/Demographic and Spatial Analysis: Different methods of population/demographic and spatial analysis should be used to get a better understanding of each settlement and the functions it performs. One method may be the Hoover's Index of population concentration as discussed in section 5.2 in this chapter. Another method may be the use of scalogram to analyze different functions which can be found in different settlements. A portion of such a scalogram is shown in figure 4.3 for the Mianwali district in the Punjab (Data showing a function present or absent in a particular settlement is hypothetical). On the left side of the worksheet, settlements are listed in descending order of their

FIGURE 4.3



SOURCE: Census of Population (Punjab), 1981.

population. This type of analysis will help in determining the location of different activities in a particular settlement.

Threshold Analysis can also be used to access the functional characteristics of settlements in a tehsil or a district. It is done through an analysis of the population sizes required to support those services, facilities, and infrastructures that already exist within an area. The following relation is used:

$$\text{Threshold (TH)} = \frac{100 \times Ps}{Ps \times Ag}$$

Where: Ps = number of settlements below a certain population level having the function; and

Ag = number of settlements above this population level not having the function (Rondinelli, 1985: 122).

Data collected in the scalogram analysis can be utilized to perform the threshold analysis by using the above relation. Similarly, different methods of regional economic analysis (e.g., input-output analysis, factor analysis, location quotient, shift-share analysis, etc.) should be used to assess the economic potential of different settlements and their respective regions. A regional economist may be hired to perform this task if rural planner finds it a difficult task to perform (although different computer software packages for regional economic analysis are easy to use).

(5) An Analysis of Urban and Rural Linkages: An analysis of existing linkages between different areas in the settlement system should be carried out by the regional planners in the Punjab. Rondinelli (1985) states that regional development occurs through the growth and diversification of settlements and the creation of new and stronger linkages among them. In some cases the extension of physical linkages such as road, rail, or river transport promotes growth and diversification in existing settlements; in others it stimulates the growth of new central places. New linkages usually promote greater interaction between settlements and their rural hinterlands. Simply improving transportation among villages often leads to reorganization and expansion of existing periodic markets (*ibid.*, p.141). The following questions, as proposed by the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP), should be asked by the planner working in the Punjab. These can be answered by doing the analysis on urban and rural linkages:

- (a)- What is the pattern of flows of agricultural products from rural areas to demand centers?
- (b)- Which areas provide the raw materials for manufacturing activities?
- (c)- To which do farmers go to obtain the agricultural inputs they need, such as fertilizers, farm

implements, improved seed and credit?

- (d)- What changes can be made in the road network to improve the marketing of the rural products?
- (e)- Does the regional resource base provide the potential to support additional production and processing activities?
- (f)- What new activities can be supported? What linkages are needed to support these activities?
- (g)- What is the pattern of key communication linkages?
- (h)- What are the daily, weekly, and seasonal commuting patterns of the off-farm labor?
- (i)- What are the key bottlenecks in the existing linkage system? (p. 186).

A complete set of major linkages should be identified while doing the settlement analysis in the Punjab. Table 4.3 defines major linkages which should be considered in a typical spatial development analysis.

Table 4.3.: MAJOR LINKAGES TO BE CONSIDERED IN THE PROPOSED SPATIAL DEVELOPMENT OF THE PUNJAB

T Y P E ¹	E L E M E N T S
Physical Linkages	Road Networks River and Water Transport Railroad Networks Ecological Interdependencies
Economic Linkages	Market Patterns Raw Materials and inter. goods Capital Flows Production Linkages-- Backward, Forward, and Lateral Consumption and shopping patterns Income Flows Sectorial and Interregional Commodity Flows "Cross Linkages"
Population Movement	Migration - Temporary and Permanent Linkages Journey to Work
Technological Linkages	Technology Interdependencies Irrigation Systems Telecommunications Systems
Social Interaction Linkages	Visiting Patterns Kinship Patterns Rites, Rituals, and religious activities Social Group Interaction
Service Delivery Linkages	Energy Flows and Networks Credit and Financial Networks Education, Training, and Extension Linkages Health Service Delivery Systems Professional, Commercial, and Technical Service Patterns Transport Service Systems

Table 4.3 (cont.)

Political, Administrative, and Organizational Linkages	Structural Relationships Government Budgetary Flows O r g a n i z a t i o n a l Interdependencies A u t h o r i t y - A p p r o v a l - Supervision-Patterns I n t e r - j u r i s d i c t i o n a l Transaction Patterns Informal Political Decision Chains
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¹ Adopted from **Dennis A. Rondinelli** Applied Methods of Regional Analysis (Boulder: Westview Press Inc., 1985).

(5) Micro-Level Policies: At the individual village level, policies of self reliance and self sufficiency should be followed. Such policies and programs are being successfully implemented in the Aga Khan Rural Support Program in the northern areas of Pakistan. Following general policies are at the village level proposed. Some of these programs are taken from the Aga Khan Program:-

(a) Each village should have a village organization (VO). Technical and financial assistance to a VO should be provided by the government. Instead of creating a new government department, the government should utilize the existing staff of the Department of Rural Development.

(b) Every village should be assigned one Productive Physical Infrastructure (PPI) project. A number of projects (e.g., road construction, water channels, etc) should then be identified in a particular village. The

villagers should then be asked to select one such project. The project selected by the village majority should then be implemented with the help of the village labor force. Other projects should be selected in the subsequent years in the same way.

(c) Other major programs should include: the development of organizational skills and discipline; human resource development and training; agriculture and livestock development; savings and credit; marketing of agricultural produce; women's development; and creation of data banks at the village level after conducting socio-economic and other related surveys (100% coverage is desirable).

(d) Individual village resource constraints should be analyzed. For example, the livestock feed and domestic fuel problems are the two major areas of concern to the rural planners in the rural Punjab.

(e) "[C]onsideration should be given to complementing work on agro-ecosystems analysis at the village level with a farming system approach focussed on the household, in order to provide a framework for promoting household development activities in relation to resource constraints, income opportunities and consumption needs" (World Bank, 1987: p. xix).

(f) Because of the importance of irrigation to village

livelihoods and the proposed program strategy, attention should be given to optimal layouts of irrigation systems and water management (ibid, p. xix).

(g) The Marketing program should be strengthened by giving even greater attention to marketing beyond the farm gate (as it is being done in the Aga Khan Program), including assisting farming to understand, evaluate, and test markets, create market infrastructure, improve produce quality, and avoid exploitation (ibid, p. xx).

(6) Poverty and income inequality: A Human Settlements Development Policy should also address the question of poverty and income inequality especially in the rural areas of the Punjab. Such policy should include different programs and strategies to reduce poverty and income inequality in the rural areas. These policies are well summarized by Nafziger (1984). He states that:

"[P]olicies that would increase rural income and reduce rural poverty are manifold. The development of labor-intensive capital equipment, the establishment of rural credit agencies, agricultural research centers that conduct on-farm tests, institutes to develop and adapt technology for small farmers, an extension service integrated with development agencies, an irrigation authority that conducts careful feasible study of proposed

projects, and government ministries that provide suitable and timely inputs to farmers are estimable goals. So, too, farm commodity and foreign exchange prices close to market-clearing rates, greater expenditures on social and educational services in rural areas, redistribution of the land to the rural poor, the establishment of agro-industries, basic consumer goods industries, and other small industries in rural areas, and investment in marketing, transport, and storage facilities for agricultural commodities would improve the lot of the rural poor Well planned, cooperative ventures can help small farmers improve productivity by allowing them to take advantage of economies of large scale production Production-oriented rural development projects like small farmer credit, agricultural innovations and new technology, and improved extension services are likely to reduce agricultural terms of trade, and thus reduce rural incomes in the short run. To increase incomes of rural poor, production-oriented programs need to be

combined with policies to improve relative agriculture prices and rural income distribution"

(Nafziger, 1984: p. 141).

More stress on the attainment of basic needs (e.g. providing food, shelter, clothing, safe water and sanitation) has been advocated by different scholars as an effective way to end poverty in the developing countries (Streeten, Paul, et al., 1981). This approach has been called the "basic needs approach". Meeting the basic human needs in a less developed region will reduce the level of poverty and income inequality in that region. Such scholars argue "[a] basic needs approach looks deeper than the aggregate figures and their distribution by deciles and, by more selective and precisely targeted measures, seeks to fulfil basic needs in a shorter period. In this approach poverty is defined not by income, poverty lines, and deciles of the income distribution, but as the inability of identifiable groups of human beings to meet certain basic human needs. Poverty is characterized by hunger and malnutrition, by ill health, and by the lack of education, safe water, sanitation, or decent shelter. A vital task in the elimination of poverty is thus to secure the access

of the poor to these goods and services"

(Streeten, 1981: p. 159).

- (7) Development of Lahore -- the primate city: Although the development of secondary and intermediate size cities in the settlement system is important, yet attention should also be focussed on large urban centers such as Lahore, Rawalpindi and Faisalabad in the Province. These urban centers are faced with problems of squatter settlements, traffic congestion, housing shortage, and un-controlled urban sprawl. Urban centers have their own unique problems as compared to rural settlements. For example, in 1983 Lahore had a backlog of 300,000 houses and whose housing supply was falling by 15-20,000 dwellings per year, and in which about 40 percent of the population lived without piped water and 10-15 percent of the population did not have an access even to a shared latrine (Qadeer, 1983: p. 267). Realistic policies are needed to achieve effective and equitable urban development. Qadeer (1983) has proposed the following five strategies to achieve such an urban development in Lahore:

- (i) Institutional Reorganization and Administrative Reforms: Top priority in attempting to ensure a minimum quality of life to all in the city should be given by streamlining decision-making processes

and to reforming administrative operations, and reducing corruption, particularly in the public sector -- a mechanism which makes public agencies responsive to public needs and removes authoritarian insularity of functionaries (p. 267). He argues "[I]t is pointless to develop elaborate housing standards and regulations if only 12 percent of houses are built with official permission. What is the relevance of the UN-sponsored fad for computerization of land records when every step of the land development is tailor-made for graft? In the same vein, can there be an adequate public transport as long as managers cannibalize buses for spares and drivers pocket fares? Without an efficient and dependable operational system, grandiose programs and progressive policies have little effect" (p. 268). The objective of institutional reorganization should be the creation of 'a city where basic facilities and services are available to all without favor. A citizen should be able to get a reply to his or her letter

or be able to pay a tax bill without having to bribe; to register a complaint with some assurance of fair response; and to expect to be treated as a human being in accordance with the rule of law. These are the preconditions for ensuring effective and equitable urban development. Creation of such conditions should be the first step in dealing with the urban crisis.

(ii) **Collectivization of Basic Services:** Latrines, water taps, baths, garbage collection, and even electricity should be provided on a shared or joint ownership basis to almost everybody. For example, two latrines (for men and women separately), a water stand-pipe, and a common shed may be provided to a cluster of three to four houses. This concept of clustering and collectivizing may also be extended to other uses such as telephones, and refrigerated storage.

(iii) **Indigenizing City Planning:** "[C]ity planning in Third World cities should rationalize, strengthen, and build upon the developmental potential of traditions and historical practices" (*ibid*: p. 269). For example in Lahore, the bazaar sector has continued to be central to the economy of the city. Yet the land use plans, housing schemes, or transportation policies reflect little of this

reality. According to Qadeer, the fact that the spatial order of Lahore consists of mixed land uses and intertwined uses has not been registered in the city planning practice. A formal process of solving city's problems is necessary, but it should be based on objective understanding of the local situation.

(iv) **Transportation:** For a city like Lahore, transportation needs can be met as much as by extending road networks and building mass-transit facilities as by reducing travel demand. Studies have shown that if different services and facilities (e.g., schools, dispensaries/clinics, government offices, etc.) are located such that they are easily accessible to the general public, then travel demand in Lahore would probably decrease by 10 to 20 percent (*ibid*, p. 270). The existence of different modes of transport (slow and fast) has created complex transportation problems. A transportation plan should give highest priority to the problems associated with slow moving traffic (i.e., horse-driven carts, bicycles, and pedestrians) in the city. The city of Lahore is not characterized by multi-level traffic interchanges and hugh clover-leave intersections and highways.

Lahore is rather a city known for its busy and small streets, shopping and commercial areas, and a walled city where traditions are still followed and social interaction between different social groups can be seen working at its best. Transportation planning and engineering standards developed for the developed countries may not be suitable when applied to a city like Lahore. The planners working in Lahore will not find standards in the literature written for western developed societies. The planners will have to develop their own standards.

- (v) **Housing:** Like any other big metropolis of the Third World, Lahore has a high housing shortage. The housing delivery system should be such that it should deliver houses to the same target groups for whom they are built. Affordable housing should be built and encouraged. Low-cost housing techniques should be developed and applied. Site and Services housing schemes should be constructed. Extensive research may be done to find land for housing the poor and to design and implement low-cost/affordable housing by the Lahore Development Authority (LDA), and Punjab Housing, Physical, and Environmental Planning Department in collaboration

with the Department of City and Regional Planning at the University of Engineering and Technology, Lahore.

(8) Professional education and training in rural planning:

Most of the expertise available in the field of planning is urban oriented. Very few planners have a background or an interest in the rural settlement planning. There is a need to establish an institute for rural settlement planning in the Punjab. The Department of City and Regional Planning at the Lahore Engineering University may also be expanded to accommodate such a division. There is also a need to educate even the "educated" planners about the importance of rural planning in a developing country. A need for such an education is described by E. F. Schumacher (1973). He states that: "[I]f we have learnt anything from the last ten or twenty years of development effort, it is that the problem (of human suffering in the rural areas) presents an enormous intellectual challenge. The aid-givers---rich, educated, town-based---know how to do things in their own way; but do they know how to assist self help among two million villages, among two million villagers ---- poor, uneducated, country based? They know how to do a few big things in big towns; but do they know how to do thousands small

things in rural areas? They know how to do things with lots of capital; but do they know how to do them with lots of labors---initially untrained labor at that?" (Schumacher, 1973: 196).

One can imagine the drastic results that can follow as a result if the above questions are not answered before implementing any rural development program. Although this idea will not be much appreciated by the urban-biased planners, yet they should not be allowed to engage in the practice of rural/regional planning without having sufficient education and training.

CHAPTER-V

CONCLUSIONS AND RECOMMENDATIONS

5.1: CONCLUSIONS AND RECOMMENDATIONS

A number of conclusions can be drawn about the existing settlement system and the ongoing development policies in the Punjab. The following conclusions are based on the review of regional development theories, the analysis of the existing settlement system, administrative structure, and rural development programs in the Punjab as presented in previous chapters. Related references and studies have also been cited where applicable. A number of conclusions about the social, cultural, and political system in the Punjab are based on studies done by different researchers in the field. The study of social, cultural, and political factors is undertaken because they are interrelated with the physical and economic policies proposed in this study.

The major findings and recommendations of this study are:

- (1) The hypothesis that the current resources are not utilized in an effective manner has been generally supported. It has also been shown that some of the intermediate level settlements are growing more than expected and can be termed as overachievers, i.e., growing more than expected when compared with five primate cities: Lahore, Rawalpindi, Faisalabad, Multan, and Gujranwala.
- (2) An analysis of population concentration by using the

Hoover's Index reveals that population is concentrating with a higher rate in secondary cities as compared to primate cities.

- (3) An analysis of urban-rural population shows that the percentage of urban settlements is increasing at a much higher rate as compared to rural settlements (please see appendix B). More and more areas are becoming urbanized.
- (4) The conventional regional development theories, (i.e., the central place and the growth pole theories) have not met with much success in the Punjab.
- (5) The programs undertaken by the Pakistani Government for the development of human settlements are concentrated in large urban areas like Lahore, Rawalpindi, Faisalabad, and Multan. Development priorities are not set for intermediate/secondary cities like Jhang, Sahiwal, and Sargodha.
- (6) Since the intermediate level cities are not given enough government funds and resources, these settlements can only offer a low level of employment opportunities and low wages to their inhabitants. Poverty and disease are a common characteristic of such settlements, as a consequence.
- (7) "[T]he bureaucratic control through synoptic planning has created an environment where the masses feel that the development is the sole responsibility of the

government (Ul Karim, 1985: 64). This practice has resulted in stagnant communities where people do not feel confident to take development initiatives (e.g., self-help housing and infrastructure construction) or risks on their own. This phenomenon is well summarized by Saghir Ahmad (1977). He states that: "[U]nlike American communities, Pakistani village communities do not have the tradition of initiating and deciding plans or programs for the total community. Almost all programs of development or change are initiated and carried on by governmental agencies. The most one can hope to observe is who supports and who does not support a particular program or issue. In my observation, however, the people in general remain apathetic" (p.130).

This clearly suggests that a planner working in the Punjab should not be very optimistic about the people participation in the development process. Effective techniques may be developed for more people participation.

- (8) Agriculture is the mainstay of the Punjab economy. About 70% of the population still lives in the rural towns and small villages. For a proper implementation of any settlement policy, the class and power structure in the rural areas should be considered in a greater

detail.. The people who play important roles in the local decision making are the landowning elites. A policy against their interests will end up as an exercise in futility. These elites are also actively involved in the legislative process, both at the provincial and national levels. Not only does this give them security from the government, but also a chance to rule the poor peasants in almost any manner they want. The distribution of property and income is not equitable. These conditions act as constraints to any rural development policy.

- (9) "Rural development" has become a popular political slogan for the ruling politicians. It would be unrealistic to assume that a carefully calculated and designed rural development program will benefit the target group(s) for which it has been initiated. In "real life" this does not happen. It is rather a dirty game played by the ruling classes and the landowning elites. According to Qadeer (1983), "[R]ural Development Programs (in Pakistan) offer another example of irrelevant institutional development wherein forms are emphasized and substance ignored. Such programs have come to mean a new set of officials and offices every time a measure is instituted. Local notables immediately calculate what they can get out of

a (rural development) program, and become coopted as citizens' leaders. Thus, the officials and notables together appropriate the funds and monopolize the benefits. So predictable are these patterns that the same locals nearly always benefit, no matter what new twist is given to a program. One of the few comprehensive evaluations of these programs suggest that beneficiaries are middle- and upper-middle class entrepreneurs. They are town merchants, commercial farmers, teachers, clerks, and other petty rural officials This narrative suggests that the development efforts benefit the middle-class entrepreneurs and other respectables" (p.63). These conclusions are also well summarized by Gunnar Myrdal (1968). He states that "[A]ll the significant policy measures of agricultural uplift adopted by the government- whether technological or institutional - have tended to shift the power balance of the rural structure in favor of the privileged classes" (p.1367).

- (10) Political, social and Religious considerations: A number of political, social and religious factors should also be considered while any settlement policy is framed for the Punjab. The existing political and social institutions favor the ruling and the landowning elites.

Poor masses are being exploited in the name of religion and other related acts. Many crucial problems such as malnutrition, high infant mortality, and high illiteracy are being ignored to be substituted with new ideologies and theories. The ideology on which Pakistan was established was never defined in a way the present rulers interprets it today. The ideal for Pakistan was clearly defined by its founder, Muhammad Ali Jinnah in 1947. He stated: "[Y]ou are free to go to your temples, you are free to go to your mosques or to any other place of worship in this state of Pakistan. You may belong to any religion or caste or creed, that has nothing to do with the business of state Now, I think that we should keep that in front of us as our ideal and you will find that in course of time, Hindus will cease to be Hindus and Muslims would cease to be Muslims, not in the religious sense, because that is the personal faith of each individual but in the political sense as citizens of the state" (Khan, 1983: pp. 221-222). On the other hand, the late former military ruler declared: "[M]uslims believe in one God, one prophet and one book, and their mentality is that they should be ruled by one man" (Richter, 1979: p. 556).

There is a need to make changes in the constitution of the country to make it more realistic and applicable to the real world conditions (e.g., severe punishments for the military to try to indulge in the business of the state). There is a need to improve the institutions of law and order (courts and the police departments) to make people feel more secure from day-to-day problems.

(11) Local Level Administrative Structure: A number of conclusions and recommendations can be framed about the role of local level administration in the success of rural development programs in the rural Punjab (as discussed in chapter 3). These are summarized as follows:

- (a) The argument that the existing administrative/social structure and property relations are factors which have never seriously been taken into consideration when either formulating or analyzing the success or failure of these programs is certainly very correct and this has played a very important role in the limited success of these programs.
- (b) According to Ul-Karim (1985), "[A]ll these programs invariably suffered from top-down and centralized planning reflected in the uniformities of various activities undertaken. These programs failed to set up effective local level institutions through which

people could articulate their demands and actively participate in planning and implementing various projects."

- (c) It is obvious that no lessons were learned from the previous programs while initiating new programs.
- (d) The local administrative structure and local level administration has been a major factor in the low level of success in these programs. The administrators at the local level did not cooperate with those people who were given the responsibility to carry out these rural development programs. They were of the view, perhaps, that by extending their cooperation they would lose their authority and powers.
- (e) Local administration is not trained in carrying out different development programs in the rural areas. They are only trained in basic revenue collection methods and keeping records of land sales and related transactions.
- (f) There is no city planner at the sub-district, municipal committee, and town committee levels to make comprehensive plans (although the need of having a planner at the MC and TC levels was realized by the government some time ago, but the idea has not yet been implemented).
- (g) Very few data are available at the village, union

council, sub-district and district levels. The census of population records very little information about rural settlements.

- (h) Before initiating any settlement policy, at least one city planner should be appointed at municipal committee, town committee, and union council levels. Adequate staff should be provided so that the planner can work in an efficient manner.
- (i) The planner should be given legal protection by making changes in the local laws.
- (j) Every municipal committee, town committee, and municipal corporation should be required to prepare comprehensive plans, and zoning and land subdivision regulations.
- (k) The decision making process should be decentralized so that the village people can make their own decisions.
- (l) Policies should be framed not to support the rural elites and the bureaucracy, but to benefit the local people (an idea which looks like an allusion at this time since both these institutions have very strong political support from the ruling elites).
- (m) The element of urban bias should be eliminated from the local administration. Policies should benefit not only the urban areas but the rural areas also.

- (n) The change in the local level election system should be done. People should be elected and not appointed to different political positions.
 - (o) Union Councils and the markaz/center organization should not have any government appointed civil servant to slack the grip of bureaucracy (Ul-Karim: 1985)
 - (p) Local level administration should be responsible to create data banks of their respective areas.
 - (q) Training programs should be initiated for local administration about the rural development techniques and programs. Senior planning students and practicing planners can be utilized to train the local administration about the important aspects of planning.
- (12) Risk Analysis: Before proposing or implementing any development project or strategy, studies should be conducted about the amount of risk involved for the target group. What if the people are not ready to take the risk involved in the project? What if the project has a limited success or results in a total failure? The planners have to lose nothing in this case. But the poor people may lose a useful source of their livelihood.
- (13) Population/Demographic Analysis: Data on migration and birth/death rates should be recorded on a regular basis at all settlement levels. Population projections for

the twelve secondary cities are calculated in table 5.1 by using the non-linear (parabolic) regression technique. Except for Okara city, the non-linear coefficient of coorelation for rest of these cities is very close to unity (0.99). For Gujrat city, it is one.

This clearly shows that the population of these settlements is experiencing a rapid population growth.

Table 5.1: Population projections of the secondary cities by using the non-linear regression technique

SECONDARY CITY (Ranked by 1981 pop)	CORRELATION COEFF.		PROJ. POP.(millions)		
	Linear	Non-Linear	1988	1991	2001
Sialkot	0.9576	0.9959	0.32	0.35	0.48
Sargodha	0.9551	0.9913	0.31	0.35	0.51
Jhang	0.9668	0.9978	0.25	0.28	0.39
Kasur	0.9448	0.9969	0.20	0.23	0.33
Gujrat	0.9625	1.0000	0.21	0.23	0.34
Bahawalpur	0.9967	0.9970	0.17	0.18	0.21
Sahiwal	0.9874	0.9985	0.18	0.20	0.27
Sheikhupura	0.9534	0.9996	0.20	0.23	0.34
Okara	0.9791	0.9834	0.15	0.16	0.21
Rahim Yar Khan	0.9898	0.9976	0.15	0.17	0.23
Chiniot	0.9578	0.9995	0.14	0.15	0.22
Dera Ghazi Khan	0.9790	0.9999	0.13	0.14	0.19

SOURCE: Computed by the author from 1951-81 census data.

5.2: CONCLUDING REMARKS

Although the recommendations given in this study may help in achieving an equitable regional development, yet important questions should also be asked about some important issues. In the beginning, these issues may not seem to fit into the scope of the present study. However, it is my firm belief that without finding suitable answers to these problems, equity in human settlements development planning may not be possible at all. The critical issue is the question of general consensus among the planners about the form of planning to be followed for the human settlements development. The three principal forms that planning can take are: allocative, innovative, and radical (Friedmann, 1987: 33). Friedmann states that allocative planning is concerned with the disposition of scarce resources (financial, land, labor) among competing claimants and uses (examples of allocative planning are program budgeting, land use planning, economic development planning and various forms of sectorial planning), innovative planning is concerned with institutional changes in the system of societal guidance, and finally radical planning is distinctive in drawing on organized citizen power to promote projects pointing toward social transformation. Friedmann further points out that examples of radical planning efforts are found in conjunction with action-oriented citizen movements, where they mediate between theory and practice in such matters as alternative

economic development, producer cooperatives, feminist projects, and alternative energy programs. Planners should note that the three forms of planning seldom exist in their purest form; rather they often overlap. The present study has dealt more with allocative planning than with the other two forms of planning. It stresses the need of an efficient and equitable allocative planning for the secondary cities, although there may be a need for some institutional change and radical planning in changing the attitudes of ruling elites and rural and primate city dwellers.

The present study is limited to the Punjab Province only. But the concepts, policies and recommendations given in this study may also be extended to the other three provinces of Pakistan. It may be more realistic and logical to draft a national settlement policy to integrate major social, economic, physical, technical, and political/cultural aspects of city and regional planning both at the national and regional level.

The present study may also be considered a tool to control some of the rural-urban migration. But clearly, it is not a tool to control the rapid population growth within the proposed secondary cities. The high rate of population increase in the province may best be controlled by a good population planning program. So in this perspective, the present study may be termed as an approach to "buy some time". If rapid population growth is not brought under

control, then the proposed secondary cities may eventually become major urban agglomerations just like the present five primate cities, which is not a major objective of this study.

Furthermore, the development of an equitable and efficient system of human settlements will also depend upon the willingness of the ruling elites to solve the basic human problems faced by the nation. It will depend upon their degree of devotion to the citizens. Unfortunately, there is a great scarcity of devoted and sincere public and political leadership in Pakistan. A change in the government may bring new faces, but the basic system will remain the same. In the light of the above discussion, it would be unrealistic to believe that any human settlement development policy will result in a totally equitable and efficient development of the land and the people. Thus, the policies and recommendations framed in this study should be considered in the above perspective.

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APPENDIX A

(POPULATION PROJECTIONS OF THE PROPOSED SECONDARY CITIES IN THE PUNJAB BY USING THE LINEAR AND NON-LINEAR STATISTICAL REGRESSION TECHNIQUES AND THE CALCULATION OF LINEAR AND NON-LINEAR REGRESSION CONSTANTS, CORRELATION COEFFICIENTS, AND STANDARD ERRORS OF ESTIMATE)

POPULATION PROJECTIONS OF THE PUNJAB USING LINEAR AND NON-LINEAR (PHENOLIC) REGRESSION TECHNIQUES

Year	Population	$N^{1/2}$	NY	Y^2	N^3	N^4	$X^2(Y)$	Linear Yest.)
1951	20,541,000	3.81E+06	4.01E+10	4.22E+14	7.43E+09	1.45E+13	2.82E+13	1.86E+07
1961	25,464,000	3.85E+06	4.59E+10	6.48E+14	7.54E+09	1.48E+13	5.79E+13	2.79E+07
1972	37,607,000	3.89E+06	7.42E+10	1.41E+15	7.67E+09	1.51E+13	1.46E+14	3.60E+07
1981	47,292,441	3.92E+06	9.37E+10	2.24E+15	7.77E+09	1.54E+13	1.86E+14	4.62E+07
Total =	7865 130,904,441	1.55E+07	2.58E+11	4.72E+15	3.04E+10	5.98E+13	5.08E+14	

$N =$

(1) LINEAR CONSTANTS : $A = -1.76E+09$; $B = 9.14E-05$

(2) NON-LINEAR CONSTANTS : $A = 5.57E+10$; $B = -5.76E+07$; $C = 1.49E+04$

(3) CORRELATION COEFF. (LINEAR) = 0.98796 ; CORRELATION COEFF. (NON-LINEAR) = 0.99762

(4) STANDARD ERROR OF ESTIMATE (LINEAR) = 1612168.68 ; STANDARD ERROR OF ESTIMATE (NON-LINEAR) = 737212.04

POPULATION PROJECTIONS

YEAR	PROJECTION (Linear)	PROJECTION (Non-linear)
1988	52,607,399	52,928,595
1991	55,349,646	62,771,204
1996	59,920,057	71,497,154
2001	64,490,468	80,846,777
2006	69,060,979	91,000,071
2011	73,631,291	101,897,036
2016	78,201,702	113,532,673
2021	82,772,113	125,921,981
	0	0
	0	0

 POPULATION PROJECTIONS OF SIRKOT CITY (H.C.) USING LINEAR AND NON-LINEAR (PARABOLIC) REGRESSION TECHNIQUES

Year	Population	$N^{~2}$	N^3	N^4	N^5	N^6	N^7	N^8	N^9	$N^{~2}(Y)$	$N^{~4}(Y)$	$N^{~6}(Y)$	$N^{~8}(Y)$	Parabolic Y(est.)
1951	124,267	3,81E+06	2,42E+08	1,54E+10	7,49E+09	1,45E+13	4,73E+11	1,13E+05	1,26E+05					
1961	146,937	3,85E+06	2,88E+08	2,16E+10	7,54E+09	1,48E+13	5,65E+11	1,56E+05	1,41E+05					
1971	183,885	3,89E+06	3,62E+08	3,37E+10	7,67E+09	1,51E+13	7,14E+11	2,03E+05	1,90E+05					
1981	258,147	3,92E+06	5,11E+08	6,56E+10	7,77E+09	1,54E+13	1,01E+12	2,42E+05	2,56E+05					
		0.00E+00	0.00E+00	0.00E+00	0.00E+00									
		0.00E+00	0.00E+00	0.00E+00	0.00E+00									
		0.00E+00	0.00E+00	0.00E+00	0.00E+00									
		0.00E+00	0.00E+00	0.00E+00	0.00E+00									
		0.00E+00	0.00E+00	0.00E+00	0.00E+00									
		0.00E+00	0.00E+00	0.00E+00	0.00E+00									
Total =	7865	712,936	1,55E+07	1,40E+09	1,37E+11	3,04E+10	5,98E+13	2,77E+12	7,13E+05					

$$N = 4$$

$$\text{LINEAR CONSTANTS : } A = -8.28E+06 ; \quad B = 4.30E+03$$

$$\text{NON-LINEAR CONSTANTS : } A = 5.43E+08 ; \quad B = -5.57E+05 ; \quad C = 1.43E+02$$

$$\text{CORRELATION COEFF. (LIN.)} = 0.95761 ; \quad \text{CORRELATION COEFF. (NON-LINEAR)} = 0.99591$$

$$\text{STANDARD ERROR OF ESTIMATE (LINEAR)} = 1.4627.96 ; \quad \text{STANDARD ERROR OF ESTIMATE (NON-LINEAR)} = 4599.70$$

$$(116)$$

POPULATION PROJECTIONS

YEAR	PROJECTION (Linear)	PROJECTION (Non-linear)
1988	271,830	322,896
1991	284,740	355,960
1996	306,256	416,775
2001	327,772	484,725
2006	349,289	559,812
2011	370,805	642,035
2016	392,921	731,393
2021	413,838	827,888
2022	0	0
2023	0	0

POPULATION PROJECTIONS OF SARGODH CITY CHC. 3 USING LINEAR REGRESSION TECHNIQUES

$N = 4$
LINEAR CONSTANT
NON-LINEAR CONSTANT
CORRELATION COEFFICIENT

$\beta = -5.37E+03$
 $\beta = -6.77E+05$
 $\beta = -1.00E+00$

ON-LINE = 3

FINDING ERROR OF ESTIMATE (LINEAR) = $\frac{1}{\sqrt{n}} \cdot \text{STANDARD ERROR OF ESTIMATE (NON-LINEAR)}$ = $\frac{1}{\sqrt{10}} \cdot 8333.69$ = 833.369

SUGAR-ETIENNE EPIFECTINS

YEAR	PROJECTION (Linear)	PROJECTION (Non-linear)
1988	256,825	318,891
1991	272,342	359,503
1996	299,804	434,128
2001	326,666	517,426
2006	353,527	609,397
2011	380,389	710,041
2016	407,251	819,358
2021	434,113	937,347
2026	0	0
2031	0	0
2036	0	0

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POPULATION PROJECTIONS OF JHONG CITY (M.C.) USING LINEAR AND NON-LINEAR GEOMETRIC REGRESSION TECHNIQUES

Year	Population	$\lambda^{(2)}$	$\lambda^{(4)}$	$\lambda^{(2)}$	$\lambda^{(4)}$	$\lambda^{(2)}$	$\lambda^{(4)}$	$\lambda^{(2)}$	$\lambda^{(4)}$	Linear Fit ^(a)	Parabolic Fit ^(b)
1951	73,397	3.81E+06	1.43E+06	5.39E+09	7.43E+09	1.45E+13	2.79E+11	6.35E+04	7.48E+04	7.48E+04	7.48E+04
1961	94,971	3.85E+06	1.66E+06	9.02E+09	7.54E+09	1.48E+13	3.65E+11	1.03E+05	9.10E+05	9.10E+05	9.10E+05
1972	131,843	3.89E+06	2.00E+06	1.74E+10	7.67E+09	1.51E+13	5.13E+11	1.42E+05	1.36E+05	1.36E+05	1.36E+05
1981	195,558	3.92E+06	3.87E+06	3.82E+10	7.77E+09	1.54E+13	6.77E+11	1.82E+05	1.94E+05	1.94E+05	1.94E+05
Total =	495,769	1.55E+07	9.77E+06	7.00E+10	3.04E+10	5.98E+13	1.92E+12	4.96E+05			

$$N = \frac{4}{\text{LINEAR CONSTAN} \text{ (118)} \text{ T}} \text{ NON-LINEAR CONSTAN} \text{ T}$$

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CORRELATION COEFF. (CLINICAL) = 0.96688
CORRELATION COEFF. (NON-LINEAR) = 0.99782

```

STANDARD ERROR OF ESTIMATE (NON-LINEAR) = 30.44 .96
 STANDARD ERROR OF ESTIMATE (LINEAR) = 11.825 .06

POPULATION PROJECTIONS

YEAR	PROJECTION (Linear)	PROJECTION (Non-linear)
1988	210,162	252,157
1991	222,054	280,623
1996	241,875	332,761
2001	261,696	390,767
2006	281,516	554,641
2011	301,337	524,384
2016	321,157	559,994
2021	340,978	681,473
0	0	0
0	0	0

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POPULATION PROJECTIONS OF KHUF CITY (N.C.) USING LINEAR AND NON-LINEAR (PARABOLIC) REGRESSION TECHNIQUES

Year	Population	N^2	XY	X^2	Y^2	N^3	N^4	$X^2(Y)$	Linear (West.)	Parabolic (West.)
1951	63,086	3.81E+06	1.23E+08	3.98E+09	7.43E+09	1.49E+13	2.40E+11	5.31E+11	6.43E+04	
1961	74,546	3.85E+06	1.46E+08	5.56E+09	7.54E+09	1.48E+13	2.87E+11	8.30E+11	7.03E+04	
1972	101,295	3.89E+06	2.00E+08	1.03E+10	7.62E+09	1.51E+13	3.94E+11	1.16E+11	1.05E+05	
1981	155,523	3.92E+06	3.08E+08	2.42E+10	7.77E+09	1.54E+13	6.10E+11	1.49E+11	1.34E+05	
		0.00E+00								
		0.00E+00								
		0.00E+00								
		0.00E+00								
		0.00E+00								
		0.00E+00								
		0.00E+00								
Total =	7865	394,450	1.85E+07	7.77E+08	4.40E+10	3.04E+10	5.98E+13	1.53E+12	3.94E+05	

(119)
$$N = 4$$

$$\text{LINEAR CONSTANTS : } A_1 = -5.716 \times 10^6 ; \quad B = 2.98E+03$$

$$\text{NON-LINEAR CONSTANTS : } H = 4.45E+08 ; \quad B = -4.55E+05 ; \quad C = 1.17E+02$$

$$\text{CORRELATION COEFF. (LIN.)} = 0.94481 ; \quad \text{CORRELATION COEFF. (NON-LIN.)} = 0.99691$$

$$\text{STANDARD ERROR OF ESTIMATE (LINEAR)} = 11683.50 ; \quad \text{STANDARD ERROR OF ESTIMATE (NON-LIN.)} = 2789.10$$

POPULATION PROJECTIONS

YEAR	PROJECTION (Linear)	PROJECTION (Non-Linear)
1988	163,468	205,172
1991	172,413	230,576
1996	187,323	277,579
2001	202,232	330,409
2006	217,141	389,067
2011	232,051	453,552
2016	246,960	523,865
2021	261,869	600,005
	0	0
	0	0

POPULATION PROJECTIONS OF GURJAT CITY (M.C.) USING LINEAR AND NON-LINEAR (PARABOLIC) REGRESSION TECHNIQUE

Year	Population	\hat{Y}^2	XY	X^2Y	X^3	X^4	X^5	X^6	X^7	X^8	X^9	X^{10}	X^{11}	X^{12}
1951	46,971	3.81E+06	9.16E+07	2.21E+09	7.49E+09	1.45E+13	1.79E+11	3.57E+04	4.70E+04					
1951	59,603	3.85E+06	1.17E+08	3.55E+09	7.54E+09	1.48E+13	2.29E+11	7.16E+04	5.95E+04					
1972	100,393	3.89E+06	1.98E+08	1.01E+10	7.62E+09	1.51E+13	3.90E+11	1.11E+05	1.00E+05					
1981	155,058	3.92E+06	3.07E+08	2.40E+10	7.77E+09	1.54E+13	6.09E+11	1.43E+05	1.55E+05					
	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total = 7865	361,970	1.55E+07	7.14E+08	3.99E+10	3.04E+10	5.98E+13	1.41E+12							3.62E+05

$$(120) \quad \begin{aligned} N &= 4 \\ \text{LINEAR CONSTANTS : } A &= -6.97E+06 ; \quad B = 3.59E+03 \\ \text{NON-LINEAR CONSTANTS : } A &= 4.47E+08 ; \quad B = -4.58E+05 ; \quad C = 1.17E+02 \\ \text{CORRELATION COEFF. (LINEAR)} &= 0.96258 ; \quad \text{CORRELATION COEFF. (NON-LINEAR)} = 1.00000 \\ \text{STANDARD ERROR OF ESTIMATE (LINEAR)} &= 11428.63 ; \quad \text{STANDARD ERROR OF ESTIMATE (NON-LINEAR)} = 49.78 \end{aligned}$$

POPULATION PROJECTIONS

YEAR	PROJECTION (Linear)	PROJECTION (Non-Linear)
1988	168,625	210,642
1991	179,402	239,001
1996	197,364	288,297
2001	215,325	344,465
2006	239,287	406,503
2011	251,248	474,413
2016	269,210	548,195
2021	287,171	622,847
	0	0
	0	0

POPULATION PROJECTIONS OF BHAWALPUR CITY CHA. 2 USING LINEAR AND NON-LINEAR (PARABOLIC) REGRESSION TECHNIQUES

Year	Population	$N^{~2}$	N^3	$N^{~4}$	$N^{~5}$	$N^{~6}$	$N^{~7}$	$N^{~8}$	$N^{~9}$	$N^{~10}$	$N^{~11}$	$N^{~12}$
1951	40,698	3.81E+06	7.94E+07	1.66E+09	7.43E+09	1.45E+10	1.55E+11	1.31E+11	4.31E+11	4.21E+11	4.21E+11	4.21E+11
1961	84,377	3.89E+06	1.65E+08	7.12E+09	7.54E+09	1.48E+10	3.24E+11	7.92E+11	8.03E+11	8.03E+11	8.03E+11	8.03E+11
1972	115,660	3.89E+06	2.28E+08	1.30E+10	7.67E+09	1.51E+10	4.50E+11	1.19E+05	1.20E+05	1.20E+05	1.20E+05	1.20E+05
1981	152,009	3.92E+05	3.01E+08	2.31E+10	7.77E+09	1.54E+10	5.92E+11	1.51E+05	1.51E+05	1.51E+05	1.51E+05	1.51E+05
		0.00E+00	0.00E+00	0.00E+00								
		0.00E+00	0.00E+00	0.00E+00								
		0.00E+00	0.00E+00	0.00E+00								
		0.00E+00	0.00E+00	0.00E+00								
		0.00E+00	0.00E+00	0.00E+00								
		0.00E+00	0.00E+00	0.00E+00								
Total =	392,744	1.55E+07	7.74E+08	4.53E+10	3.04E+10	5.98E+12	1.53E+12	3.93E+05				

$$N = 4$$

(1) LINEAR CONSTANTS : $a = -7.00E+06$; $b = 3.61E+03$

(2) NON-LINEAR CONSTANTS : $a = -4.86E+07$; $b = 4.60E+04$; $c = -1.08E+01$

CORRELATION COEFF. (CLIN.) = 0.93675 ; STANDARD ERROR OF ESTIMATE (LINEAR) = 3297.72 ; STANDARD ERROR OF ESTIMATE (NON-LINEAR) = 3131.95

POPULATION PROJECTIONS

YEAR	PROJECTION (Linear)	PROJECTION (Non-Linear)
1988	176,693	172,838
1991	167,521	182,145
1996	205,569	197,226
2001	223,616	211,769
2006	241,664	225,773
2011	259,711	239,239
2016	277,759	252,166
2021	295,806	264,554
	0	0
	0	0

POPULATION PROJECTIONS

 POPULATION PROJECTIONS OF SAHIBUL CITY (M.C.) USING LINEAR AND NON-LINEAR (PARABOLIC) REGRESSION TECHNIQUES

Year	Population	N^2	N^3	N^4	N^5	$N^2(Y)$	$N^3(Y)$	$N^4(Y)$	$N^5(Y)$	Linear	Parabolic
1951	50,185	3.81E+06	9.79E+07	2.52E+09	7.43E+09	1.45E+13	1.91E+11	4.56E+04	5.11E+04		
1961	75,180	3.85E+06	1.47E+08	5.65E+09	7.54E+09	1.49E+13	2.89E+11	7.95E+04	7.26E+04		
1972	106,648	3.89E+06	2.10E+08	1.14E+10	7.67E+09	1.51E+13	4.15E+11	1.15E+05	1.09E+05		
1981	150,954	3.92E+06	2.99E+08	2.28E+10	7.77E+09	1.54E+13	5.92E+11	1.44E+05	1.50E+05		
								0.00E+00	0.00E+00	0.00E+00	0.00E+00
								0.00E+00	0.00E+00	0.00E+00	0.00E+00
								0.00E+00	0.00E+00	0.00E+00	0.00E+00
								0.00E+00	0.00E+00	0.00E+00	0.00E+00
								0.00E+00	0.00E+00	0.00E+00	0.00E+00
								0.00E+00	0.00E+00	0.00E+00	0.00E+00
								0.00E+00	0.00E+00	0.00E+00	0.00E+00
								0.00E+00	0.00E+00	0.00E+00	0.00E+00
								0.00E+00	0.00E+00	0.00E+00	0.00E+00
								0.00E+00	0.00E+00	0.00E+00	0.00E+00
								0.00E+00	0.00E+00	0.00E+00	0.00E+00
								0.00E+00	0.00E+00	0.00E+00	0.00E+00
								0.00E+00	0.00E+00	0.00E+00	0.00E+00
Total =	7865	382,967	1.55E+07	7.55E+08	4.23E+10	3.04E+10	5.98E+13	1.49E+12	3.83E+05		

$N = 4$
 LINEAR CONSTANTS : $A = -6.37E+06$; $B = 3.29E+03$; $C = 5.73E+01$
 (NON-LINEAR CONSTANTS : $A = 2.15E+08$; $B = -2.22E+05$; $C = 0.99854$)
 CORRELATION COEFF. (LINEAR) = 0.98748 ; STANDARO ERROR OF ESTIMATE (LINEAR) = 5936.95 ; STANDARD ERROR OF ESTIMATE (NON-LINEAR) = 2056.11

POPULATION PROJECTIONS

YEAR	PROJECTION (Linear)	PROJECTION (Non-linear)
1988	167,274	187,785
1991	177,141	205,747
1996	193,585	237,976
2001	210,029	273,071
2006	226,474	311,033
2011	242,918	351,861
2016	259,362	395,555
2021	275,806	442,116
2026	0	0
2031	0	0

POPULATION PROJECTIONS OF SHETH KHUPURA CITY (H.C.) USING LINEAR AND NON-LINEAR (PARABOLIC) REGRESSION TECHNIQUES

	Year	Population	x^2	xy	y^2	x^3	x^4	$x^2(y)$	Linear y \sim est.)	Parabolic y \sim est.)
	1951	29,717	3.81E+06	5.80E+07	8.83E+09	7.13E+03	1.45E+13	1.13E+11	1.73E+04	3.02E+04
	1961	41,635	3.85E+06	8.16E+07	1.73E+09	7.54E+09	1.38E+13	1.60E+11	5.10E+04	4.02E+04
	1972	80,560	3.89E+06	1.52E+08	6.49E+09	7.67E+09	1.51E+13	3.13E+11	9.4E+04	8.21E+04
	1981	141,168	3.92E+06	2.80E+08	1.93E+10	7.77E+09	1.54E+13	5.54E+11	1.27E+05	1.31E+05
			0.00E+00	0.00E+00						
			0.00E+00	0.00E+00						
			0.00E+00	0.00E+00						
			0.00E+00	0.00E+00						
			0.00E+00	0.00E+00						
			0.00E+00	0.00E+00						
Total =	7865	293,080	1.55E+07	5.70E+08	2.90E+10	3.0E+10	5.38E+13	1.14E+12	2.93E+05	

N = 4
LINEAR CONSTANTS : $a = -7.14E+06$; $b = 3.67E+03$
NON-LINEAR CONSTANTS : $a = 5.11E+08$; $b = -5.24E+05$; $c = 1.34E+02$
CORRELATION COEFF. (LIN.)= 0.95346 ; CORRELATION COEFF. (NON-LINEAR)= 0.99966.
STANDARD ERROR OF ESTIMATE (LINEAR) = 13108.66 ; STANDARD ERROR OF ESTIMATE (NON-LINEAR) = 1149.31

POPULATION PROJECTIONS

	YEAR	PROJECTION	PROJECTION
		(Linear)	(Non-linear)
	1988	153,060	201,072
	1991	161,065	231,027
	1996	162,408	286,318
	2001	200,750	346,319
	2006	219,092	412,023
	2011	237,435	492,448
	2016	255,777	572,577
	2021	274,120	663,414
	0	0	0
	0	0	0

POPULATION PROJECTIONS OF OKARA CITY (M.C.) USING LINEAR AND NON-LINEAR (PARABOLIC) REGRESSION TECHNIQUES

```

N = 4
LINEAR CONSTANTS : A = -5.57E+06 ; B = 2.87E+03
NON-LINEAR CONSTANTS : A= 1.15E+06 ; B= -1.20E+05 ; C = 3.12E+01
CORRELATION COEFF. <LIN> = 0.9791? ; CORRELATION COEFF. <NON-LINEAR> = 0.98345
STANDARD ERROR OF ESTIMATE <LINEAR> = 6730.86 ; STANDARD ERROR OF ESTIMATE <NON-LINEAR> = 6002.32

```

POPULATION PROJECTIONS

YEAR	PROJECTION (Linear)	PROJECTION (Non-linear)
1988	141,340	152,513
1991	149,958	165,540
1996	164,322	189,501
2001	178,685	213,024
2006	193,049	239,107
2011	207,412	266,752
2016	221,776	295,957
2021	236,139	326,724
		0
		0

POPULATION PROJECTIONS OF RAHIM YAR KHAN (M.C.) USING LINEAR AND NON-LINEAR (PARABOLIC) REGRESSION TECHNIQUES

$$N = \begin{matrix} 4 \\ \text{LINEAR CONSTANT} \\ \text{NON-LINEAR CORRELATION COEFFICIENT} \\ \text{STANDARD ERROR} \end{matrix} \quad (125)$$

```

CORRELATION COEFF. = -1.90E+05 ; C = 4.92E+01
CORRELATION COEFF. (NON-LINEAR) = 5.474.98 ; STANDARD ERROR OF ESTIMATE (NON-LINEAR) = 2657.59
STANDARD ERROR OF ESTIMATE (LINEAR) = 1.63E+08 ; STANDARD ERROR OF ESTIMATE (NON-LINEAR) = 5.99762

```

POPULATION PROJECTIONS			
YEAR	PROJECTION (Linear)	PROJECTION (Non-linear)	
1988	136,469	154,066	
1991	146,611	171,153	
1996	169,514	201,597	
2001	180,417	234,501	
2006	197,320	269,864	
2011	214,229	307,685	
2016	231,127	347,965	
2021	248,030	390,705	
	0	0	0
	0	0	0

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POPULATION PROJECTIONS OF CHINCHON (M.C.) USING LINEAR AND MON-LINEAR (PARABOLIC) REGRESSION TECHNIQUES

4 CONCLUSION

(1) LINEAR CONSTANTS : $A = -4.24E+06$; $B = 2.19E+03$
 (2) NON-LINEAR CONSTANTS : $A = 2.69E+08$; $B = -2.96E+05$
 CORRELATION COEFF. : $C(LIN) = 0.95798$; CORRELATION COEFF. : $C(NON) = 0.99999$

STANDARD ERROR OF ESTIMATE (LINEAR) = 7.411 .46 : STANDARD ERROR OF ESTIMATE (NON-LINEAR) = 7.411 .46

POPULATION PROJECTIONS

YEAR	PROJECTION		PROJECTION (Non-linear)
	(Linear)	(Non-linear)	
1988	113,038	140,152	
1991	119,602	157,416	
1996	130,541	189,221	
2001	141,481	224,815	
2006	152,420	264,198	
2011	163,359	307,369	
2016	174,299	354,330	
2021	185,238	405,079	
0	0	0	0

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POPULATION PROJECTIONS OF DERA GHAZI KHAN (M.C.) USING LINEAR AND NON-LINEAR (PARABOLIC) REGRESSION TECHNIQUES

Year	Population	X^2	XY	Y^2	X^3	X^4	$X^2(Y)$	Y^3	Y^4
1951	35,909	3.81E+06	7.01E+07	1.29E+09	7.49E-09	1.45E+13	1.37E+11	3.07E+04	3.58E+04
1961	47,105	3.85E+06	9.24E+07	2.22E+09	7.54E-09	1.48E+13	1.61E+11	5.28E+04	4.73E+04
1972	72,349	3.89E+06	1.42E+08	5.23E+09	7.67E-09	1.51E+13	2.61E+11	7.70E+04	7.22E+04
1981	102,007	3.92E+06	2.02E+08	1.04E+10	7.77E-09	1.54E+13	4.00E+11	9.68E+04	1.02E+05
		0.00E+00							
		0.00E+00							
		0.00E+00							
		0.00E+00							
		0.00E+00							
		0.00E+00							
		0.00E+00							
Total =	7865	257,364	1.55E+07	5.07E+08	1.91E+10	3.04E+10	5.98E+13	9.99E+11	2.57E+05

N = 4

$$\begin{aligned}
 \text{LINEAR CONSTANTS : } A &= -4.27E+06 & B &= 2.20E+03 \\
 \text{NON-LINEAR CONSTANTS : } A &= 2.01E+06 & B &= -2.07E+05 & C &= 5.32E+01 \\
 \text{CORRELATION COEFF. (LIN.)} &= 0.9705 & \text{CORRELATION COEFF. (NON-LINEAR)} &= 0.99998 \\
 (127) \quad \text{STANDARD ERROR OF ESTIMATE (LINEAR)} &= 5179.94 & \text{STANDARD ERROR OF ESTIMATE (NON-LINEAR)} &= 175.12
 \end{aligned}$$

POPULATION PROJECTIONS

YEAR	PROJECTION	
	Linear	(Non-linear)
1988	112,277	131,314
1991	118,888	145,499
1996	129,908	171,189
2001	140,928	199,499
2006	151,948	230,430
2011	162,967	264,081
2016	173,987	300,391
2021	185,007	339,363
2026	0	0
2031	0	0
2036	0	0

(APPENDIX B)

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**Table I: NUMBER OF URBAN LOCALITIES BY TYPE (1951-1981)
(Punjab)**

URBAN LOCALITIES	Census Year			
	1951	1961	1972	1981
Municipal Corporation	0	1	1	7
Municipal Committee	94	48	57	59
Town Committee	58	130	141	131
Cantonment	8	10	16	18
TOTAL	160	189	215	215

**Table II: NUMBER OF RURAL SETTLEMENTS BY POPULATION SIZE
(1981)**

POPULATION SIZE	NO. OF RURAL LOCALITIES
5000 and over	772
2000 to 4999	4,710
1000 to 1999	6,156
500 to 999	5,674
200 to 499	4,395
Under 200	2,582
Un-inhabited	977
Total no. of Rural Settlements	25,266
Average no. of Rural Population per Rural Settlement	1,355 persons
Source (I and II):	Pakistan Census of Population (Punjab), 1981.

**Table III: LOCAL LEVEL ADMINISTRATIVE HIERARCHY IN THE
THE PUNJAB.**

- (1) COMMISSIONER AND ADDITIONAL COMMISSIONER
 - (2) DEPUTY COMMISSIONER AND EXTRA ASSISTANT COMMISSIONER
 - (3) ASSISTANT COMMISSIONER
 - (4) HEAD OF SUB-DISTRICT ADMN. AND ASSISTANT HEAD
 - (5) SUPERVISORY REVENUE COLLECTING OFFICER
 - (6) REVENUE COLLECTING OFFICER
 - (7) HEADMAN
 - (8) WATCHMAN
-

**Table IV: RELATIONSHIP OF LAND TO ADMINISTRATIVE
STRUCTURE IN THE PUNJAB (1978).**

1. Number of Villages	24,541
2. Number of Land Revenue Payers	7,904,000
3. Area of Land Revenue Payers (acres)	40,726,000
4. No. of Revenue Collection Officers (R.C.O)	5,425
5. No. of Supervisory Revenue Collection Officers (SRCOs)	491
6. Ave. Land Revenue Payers per Village	322
7. Ave. No. of Villages per Revenue Collection Officer	4.5
8. Ave. Land Revenue Payers per R.C.O.	1,457
9. Ave. Area per Land Revenue Officer (acres)	7,507
8. Ave. No. of RCOs Per SRCO	11
9. Ave. Land Revenue Demand Per RCO	Rupees* 29,493

*One U.S. Dollar = Rupees 18.20 (as on September 25, 1988)

SOURCE (III and IV): Khan, Mahmood Hasan, Underdevelopment and Agrarian Structure in Pakistan (Boulder: Westview Press, 1981), pp.280-81.

FIGURE-I : The Punjab, Pakistan: Settlement Pattern, 1981.

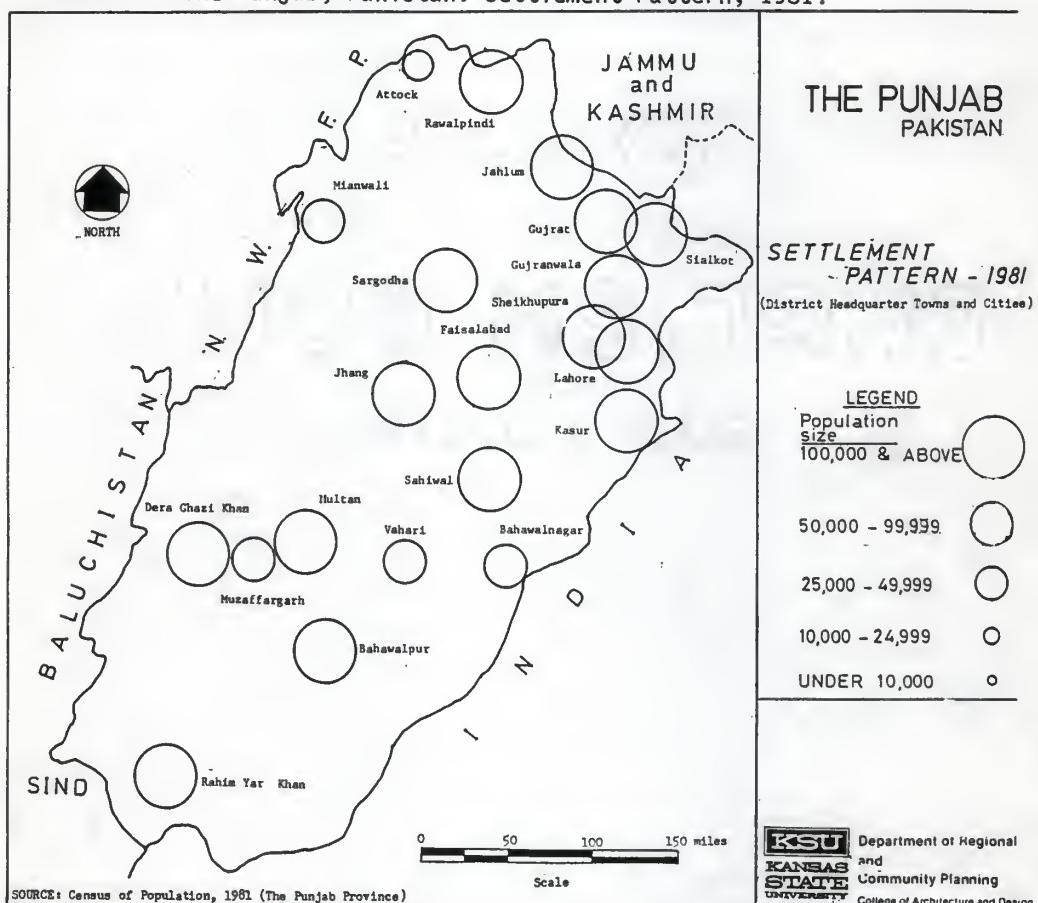
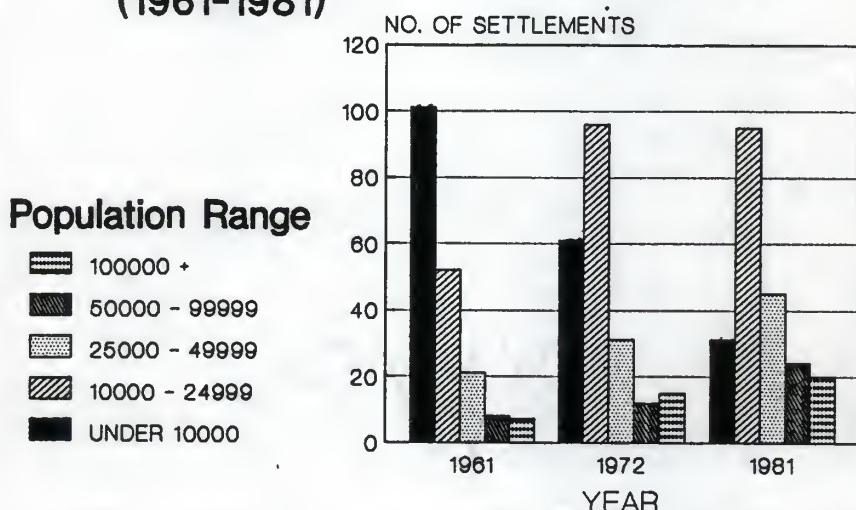


FIGURE-II **NUMBER OF URBAN SETTLEMENTS BY SIZE (PUNJAB) (1961-1981)**



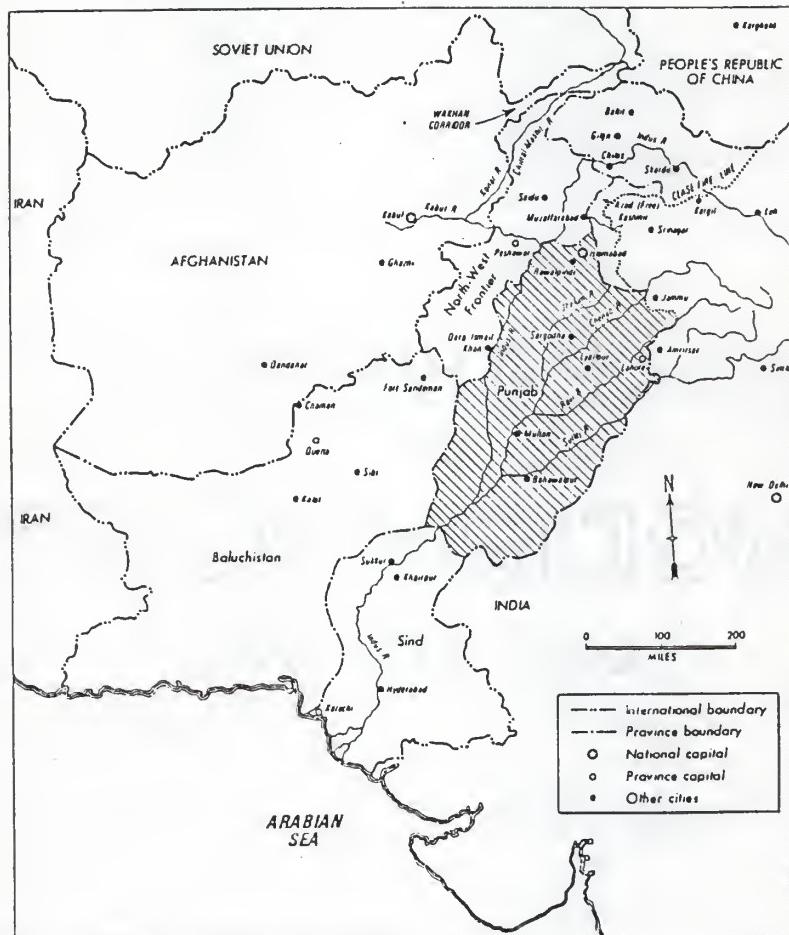
SOURCE : HANDBOOK OF POPULATION 1981

Above figure shows that the number of urban settlements having a population of 100,000 and above increased from 1961 to 1981. This clearly supports the notion of investing in the secondary cities. Also, it may be concluded that the same trend will continue in the near future.

More and more settlements are becoming urbanized with the passage of time.

FIGURE-III

Map of Pakistan



Source: The World Bank, 1984

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(ABSTRACT)

A HUMAN SETTLEMENTS DEVELOPMENT POLICY
FOR THE PUNJAB, PAKISTAN

by

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AN ABSTRACT OF A THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF REGIONAL AND COMMUNITY PLANNING

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1988

Abstract

A Human Settlements Development Policy for a developing country is considered to be an effective tool for the social, economic, physical, technological, and political/cultural development. Not only an effective settlements development policy insures a healthy community development, but also it guarantees an equitable distribution of local, regional, and national resources.

The purpose of this paper is to formulate a conceptually sound settlement policy for the Punjab, the most populous of the four provinces of Pakistan, and to demonstrate how a small package of settlement development approaches may be useful in the overall community development. This study has also attempted to show the utility of developing and investing in secondary and intermediate size cities in the Punjab for an effective and efficient regional development in the Punjab.

After a brief introduction to the Punjab Province, major regional planning theories and approaches are reviewed and discussed. It is argued that a secondary cities (cities having population of 100,000 or more excluding the primate cities) development policy may be more suitable for the Punjab because secondary cities are also growing at a high rate (growth rate of some of the secondary cities is even more than that of Lahore, the largest city in the system). It is recommended that after making necessary modifications in the local/village level development strategy of the

ongoing Aga Khan Rural Support program in the northern areas of Pakistan, the same strategy of village development may be applied in the Punjab.

In the past, many rural development programs were initiated by different political and military governments in the Punjab. These programs are also reviewed and discussed. It is shown that the existing administrative and political structure in the Province was one of the major factors responsible for the low degree of success achieved by these programs.

The proposed human settlements development policy for the Punjab promotes and encourages the development of existing twelve secondary and intermediate size cities in the Province. It is argued that such a strategy may help in reducing the negative effects of high rate of rural to primate city migration, regional economic and social inequalities, urban poverty in five primate cities, and other related problems associated with an uncontrolled high rate of population growth in the Punjab.

In order to demonstrate how the proposed policy can be successful in the Punjab, brief conclusions and recommendations are given at the end. The success of the policy is very much dependant on the will of the political and public leadership in the Province. It is argued that if the existing political and social forces continue to exist in their present form and content, then the proposed settlements development policy may not meet with much

success. Furthermore it is also possible that if the above mentioned forces continue to play their present roles, then any further policy (economic, social, or physical) based on the generally accepted principles of rationality will also meet with a very low (or zero) degree of success.